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Journal of Food Technology and Engineering	Semiannual	6000	5500	468.75	429.69
Journal of Forensic Chemistry and Toxicology	Semiannual	10500	10000	820.31	781.25
Journal of Global Medical Education and Research	Semiannual	7000	6500	546.88	507.81
Journal of Global Public Health	Semiannual	13000	12500	1015.63	976.56
Journal of Microbiology and Related Research	Semiannual	9500	9000	742.19	703.13
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Religion and Law Review: A Bibliometric Study (2015-2020)

Intekhab Alam Siddiqui

Abstract

Bibliometric study of a Journal reveals various characteristics relating to the articles published, references, authorship pattern, geographical affiliations of authors, author productivity, etc. in terms of quantity over a period of time and helps to determine the productivity of a journal. A peer reviewed and interdisciplinary journal "Religion and Law Review" taken as a source journal for this bibliometric study for the period 2015-2020. The study reveals the potential of the journal to flourish by increasing the visibility of scholarly contributions made to this journal through adopting a technology platform to increase its reach worldwide.

Keywords: Bibliometrics; Religion and Law Review; Authorship Pattern; Law Journal-Bibliometric Analysis.

INTRODUCTION

The term 'Bibliometrics' was introduced by Alan Pritchard (1969) and described as "the application of mathematics and statistical methods to books and other media of communication". Bibliometrics is one of the research methods used by library and information science professionals. Bibliometric study may be applied to a specific subject area to "evaluate the productivity of individual researcher, journals, countries or any other level of performance". (Andres, 2009). In case of bibliometric study of a journal various characteristics relating to the articles published,

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references in articles, authorship pattern, geographical affiliations of authors, author productivity, etc. can be determined in terms of quantity over a period of time. The study helps to check the quantitative growth and productivity of the journal.

SOURCE JOURNAL: RELIGION AND LAW REVIEW (RLR)

"Religion and Law Review" (ISSN 0971-3212) is a peer reviewed journal published bi-annually/annually by the Institute of Objective Studies (IOS), New Delhi. It is an interdisciplinary publication and a means of dissemination for research and scholarship since 1992. As stated in the journal, it covers scholarly discussion on various aspects of religion, law and other socio-legal issues. The periodical accords particular importance to the study of issues and events which are of contemporary concern, having a direct or indirect bearing on situations of minor or major religious groups and other underprivileged sections of the society. The

Institute of Objective Studieswas founded in March 1986 andregistered under Societies Registration Act, 1860 with the objectivesto promote the purposive research, generate understanding and awareness of conceptual issues and current problems and highlight the ethical and moral dimensions of social dynamics. (Institute of Objective Studies, 2020).

REVIEW OF LITERATURE

A good number of bibliometric studies conducted on various journals over a period of time. Here few of the studies are discussed published after 2010 and relating to the present study.

Chaparwal & Rajput (2021) assessed 15 volumes of the "Journal of Information Literacy". The analysis reveals that out of 417 articles published during 2007 to 2021, the most productive year was 2018. 68.10% papers are single authored and average productivity per author is 1.55. Sonam Singh, Chauhan, & Singh (2020) analysedthe Legal Scholarship published during 2000 to 2018 in the "Journal of the Indian Law Institute". It is observed that average 13 articles published per year while 22 articles published in 2003. Most of the articles are written by single authors and considered as good sign of publication pattern. The most prolific author was Virendra Kumar with 12 papers followed by K.I. Vibhute with 7 papers. M. Afzal Wani and Parmanand published 5 papers each. The range of cited sources goes from 4 to 290. The papers from 18 different countries published during the period of study.

Ali Raza & Malik (2018) conducted bibliometric analysis of the "Journal of Knowledge Management" for a period of 8 years (2009 to 2016). Total 508 articles contributed from 57 countries. The study also reveals most prolific authors and most productive countries.

Garg & Anjana (2014) analysed 605 articles from the "Journal of Intellectual Property Rights" published during 1996-2012. The results reveal that references per article are increasing and popularity of the journal is also increasing. There is a decline in single authored papers and increase in multi authored papers. The journal has good recognition out of India and 6.49% contributors are from USA. Academic and research institutions are highest contributors.

Singh & Bedi (2014) conducted a bibliometric study of the journal "Library Herald" published by the Delhi Library Association for 10 years (2003 to 2012) covering 40 issues and 234 articles. Average 23 articles published per year. Maximum articles (30) published in 2003 and minimum articles (14) published in 2005. Authorship pattern revealed that most of the articles (48.8%) are single authored. Majority of the authors (81.6%) is from India but most prolific author is from Iran with 16 papers. Average 11 references per articles found during the study period.

Jimoh, Eshiemokhai, & Hambali (2014) analysed "International Journal of Research in Education" on bibliographic parameters for the period 2004 to 2012. The study reveals that 94.2% contributors are from the Nigeria and 65.1% articles are single authored.

Jena, Swain, & Sahoo (2012) undertaken bibliometric analysis study of the "Journal of Financial Crime" for five volumes published during 2006 to 2010. The evaluation reveals that JFC is very consistent and publish around 30 articles per year. Like other journals single authored papers are highest. Total 155 papers published authored by 220 scholars from 41 different countries.

Harith & Singh (2014) studied bibliometric parameters of the 326 articles published in "Indian Journal of International Law". It is found that average reference per article is 70.1. Majority of the articles (97.55%) are single authored. Rahmatullah is the most prolific author with 9 papers followed by M. K. Nawaz with 7 papers. Almost 47% authors are from outside India. The study concludes that Indian Journal of International Law is a leading International Law Journal.

Thanuskodi (2010) conducted a study of the "Journal of Social Sciences" from the year 2003 to 2007. The journal published average 55 articles per year and 21.25% are contributed by single authors. The contribution from by foreign authors is 78.39%. Most of the articles (53.84%) have 5 to 10 references and documents cited were include journals, books, reference books, dissertations, seminar/conference proceedings, etc. but journal article was most preferred source.

The present study of the journal "Religion and Law Review" highlights the contribution of RLR and an addition towards purposive research as a goal of the publisher of this journal.

OBJECTIVES OF THE STUDY

The objectives of this bibliometric study are to identify the characteristics of the articles published in the journal "Religion and Law Review" during 2015 to 2020.

The following objectives are examined

(a) Quantitative growth of articles published year-wise.

(b) Distribution of references by volumes.

(c) Range and percentage of references per article.

(d) Authorship pattern of articles.

(e) Productivity of authors

(f) Ranked list of most prolific contributors.

(g) Ranked list of authors by geographic affiliations.

METHODOLOGY AND DATA COLLECTION

The study is focused on the articles published in RLR for the period 2015 to 2020. To study the characteristics and trends of article published in RLR, data of 58 articles from 6 volumes (Volume No. 24, 2015 to Volume No. 26, 2020) were collected for analysis. Book reviews, comments on cases and legislations, reports on conferences, notes, etc. were not taken into consideration for this study.

DATA ANALYSIS AND INTERPRETATION

Quantitative growth of articles by year

Total 57 articles published in RLR during the period of six years under this study (Table 1). The range of articles published is between 5 and 14 which show a slight variation. The distribution table shows that maximum articles (25%) published in each year i.e. 2015 and 2020 followed by 2017 with 10 articles (18%).

Table 1: Number and percentage of articles by year

Year	No. of Articles	Percentage
2015	14	25
2016	6	11
2017	10	18
2018	5	9
2019	8	14
2020	14	25
Total	57	100

Distribution of references by volumes and years

Table 2 presents the distribution of references.[7] The 57 articles contained a total of 2234 references or citations. The averageof references per articles is maximum for the year 2019 (74) followed by 2018

(68). The average of references in articles varied from 22 to 74 with an average of 39 references for a period of six years.

Table 2: Distribution of references by volumes

Year	No. of Articles	No. of References per Volume	Average No. of References per Articles
2015	14	424	30
2016	6	129	22
2017	10	328	33
2018	5	342	68
2019	8	593	74
2020	14	418	30
Total	57	2234	39

Range and Percentage of citation per article

Table 3 depicts the range and percentage of references per article. Total 15 articles (26%) have references between 11 – 20 per articles followed by 10 articles (18%) having references between 31 – 40 per articles. Total 3 articles (5%) have more than 111 references and 4 articles (7%) have no citations.

Table 3: Range and Percentage of citation per article

No. of References per Articles	No. of Articles	Percentage
0	4	7
1 - 10	2	4
11 - 20	15	26
21 - 30	8	14
31 - 40	10	18
41 - 50	5	9
51 - 60	2	4
61 - 70	5	9
71 - 80	2	4
81 - 90	0	0
91 - 100	0	0
101 - 110	1	2
111 and above	3	5
Total	57	100

Authorship pattern

The authorship pattern reveals the individual or collaborative capacity of the researchers in a particular subject. Table 4 indicates that majority of the authors (77.20%) preferred to publish their paper as a single author. Contribution by two authors group is 21.05% and three authors group 1.75%.

Table 4: Authorship Pattern

Year	Single Author	Two Authors	Three Authors	Total
2015	13	1	0	14
2016	5	0	1	6
2017	6	4	0	10
2018	4	1	0	5
2019	6	2	0	8
2020	10	4	0	14
Total	44	12	1	57
Percentage	77.20%	21.05%	1.75%	100%

Ranked list of most prolific contributors

It is evident from the Table 5 that M. Afzal Wani is the most prolific contributor who is the present Editor of RLR and Professor of Law in G.G.S. Indraprastha University, Delhi. Other prolific authors include Gazala Sharif (G.G.S. Indraprastha University, Delhi), Rakesh Kumar (G.G.S. Indraprastha University, Delhi), Vandana Singh (G.G.S. Indraprastha University, Delhi) who have contributed four papers during the period taken under study. Majority of the contributors are academicians.

Table 5: Ranked list of most Prolific contributors

Rank	Author's Name	No. of Contributors
1	M. Afzal Wani	10
2	Gazala Sharif	4
2	Rakesh Kumar	4
2	Vandana Singh	4
3	Arvind Jasrotia	2
3	Deepali Vashisth	2
3	Jai S. Singh	2
3	Mohd Yasin Wani	2
3	Naveed Naseem	2
3	Ravinder Kumar	2
4	Other 37 Authors	1

Ranked list of Author by geographic affiliation

The table-6 reveals the state wise distribution of articles published in RLR. Only one author contributed from out of India. The journal received maximum article (62%) from Delhi based researchers followed by the Jammu and Kashmir with 20% authors. Authors contributing from Uttar Pradesh are 8% and the contribution of authors from the states like Haryana, Rajasthan, Madhya Pradesh, Odisha is not so significant and no contribution from remaining states during the study period. Hence, the data shows that RLR has limited geographical scope.

Table 6: Ranked list of Author by geographic affiliation

Indian States and Union Territories / foreign countries	Frequency	Percentage
Delhi	44	62%
Haryana	2	3%
Jammu & Kashmir	14	20%
Madhya Pradesh	1	1%
Odisha	1	1%
Rajasthan	2	3%
Uttar Pradesh	6	8%
Other States	0	0%
Out of India	1	1%
Total	71	100%

CONCLUSION

The Religion and Law Review is being published from last three decades and attracting authors mostly from Delhi and nearby states. This Journal has potential to flourish as its publisher is a well-established organisation with defined mission and objectives. There is a need to increase the visibility of scholarly contributions made to this journal. As the technology has transformed the publishing industry, the "Religion and Law Review" should adopt a technology platform to increase its reach worldwide.

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Content Analysis of Journal of Solar Physics Publication During 2014-2018 from Springer Link Database

Dike Krushna Ashok

Abstract

This paper attempts to highlights the quantitative assessment of status of the Journal by way of analyzing the various features of Journal of Journal by way of analyzing the various features of Journal of Solar Physics. During 2014-2018 a total of 1061 Articles were published in the Journal of Solar Physics by researchers in various countries.

Keywords: Authorship pattern; International collaboration pattern; Communication channels.

INTRODUCTION

Content analysis is a highly flexible research method that has been widely used in library and information science (LIS) studies with varying research goals and objectives. The research method is applied in qualitative, quantitative, and sometimes mixed modes of research frameworks and employs a wide range of analytical techniques to generate findings and put them into context. This article characterizes content analysis as a systematic, rigorous approach to analyzing documents obtained or generated in the course of research. It briefly describes the steps involved in content analysis, differentiates between quantitative and qualitative content analysis, and shows that content analysis serves the purposes of both quantitative research and qualitative research. The authors draw on selected LIS studies that have used content analysis to illustrate the concepts addressed in the article. The article also serves as a gateway to methodological books and articles that provide more detail about aspects of content analysis discussed only briefly in the article.

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OBJECTIVES OF THE STUDY

The main objective of the study is to analyze the content Analysis of solar physics journal and quantitative assessment of status of the journal by way of analyzing the following features of journal.

1. To find out year wise growth of publications.

2. To find out geographical distribution of research output.

3. To find out the authorship and collaboration pattern in the publication.

4. To find out the extent of international collaboration.

5. To find out the most productive authors in the field.

6. To find out organization wise distribution of publication.

7. To find out the channels of communications used by the scientists.

8. To find out the high frequency keywords appeared in the channels of communication.

SCOPE & LIMITATION OF THE STUDY

Scope of study is restricted to the journal of solar physics published during 2014 to 2018. The papers presented in the journal are analyzed using content analysis technique.

The present study is limited to the total numbers of 1061 papers published during 2014 to 2018.

HYPOTHESIS OF THE STUDY

1. Authorship trend is towards multiple authored papers.

2. USA is the high productive country.

3. Majority of the affiliated Institution are from USA.

ANALYSIS OF "JOURNAL OF SOLAR PHYSICS"

In views of the objectives of the present study, analysis of Journal of Solar Physics" is presented further (Journal of Solar Physics, 2018).

Year Wise Publication Productivity And Collaboration Rate

The word publication means the act of publishing. Productivity refers to measures of output form production processes, per unit of input. Collaboration is a recursive process where two or more people or organizations work together toward an intersection of common goals.

Table 1: Year wise Publication Productivity and Collaboration Rate

Year	Single Author Publication	Multi Author Publication	Total Publication	Collaboration Rates
2014	30	245	275	0.89
2015	16	194	210	0.92
2016	16	197	213	0.92
2017	23	173	196	0.88
2018	16	151	167	0.90
Total	101	960	1061	0.90
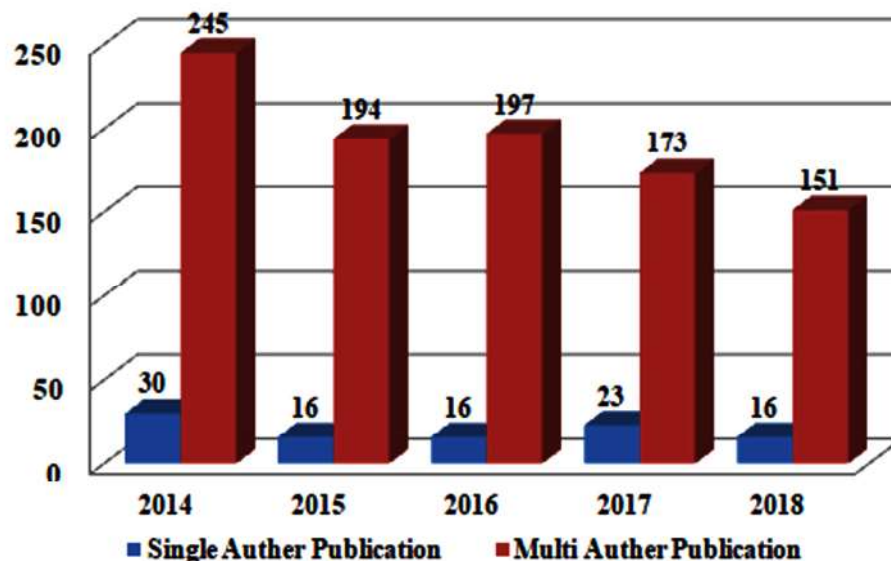
Fig. 1: Year wise Publication Productivity and Collaboration Rate

It can be observed from Table 1 & fig. 1 that during 2014-2018 a total of 1061 Articles were published in the Journal of Solar physics by researchers in various countries.

Geographical Distribution of Research Output

Geographical distribution of research output means the article published from different Countries. In political geography and international politics, a country is a political division of a geographical entity. Frequently, but not exclusively, a sovereign territory, the term is most commonly associated with the notions of both state and nation, and also with government.

Table 2: Country wise Distribution of Articles

Sr. No.	Country	Publication	Percentage	Rank
1	USA	922	20.85	1
2	Russia	420	9.50	2
3	China	348	7.87	3
4	UK	313	7.08	4
5	India	276	6.24	5
6	France	254	5.74	6
7	Japan	193	4.36	7
8	Germany	150	3.39	8
9	Belgium	130	2.94	9
10	Spain	117	2.65	10
		Truncated		
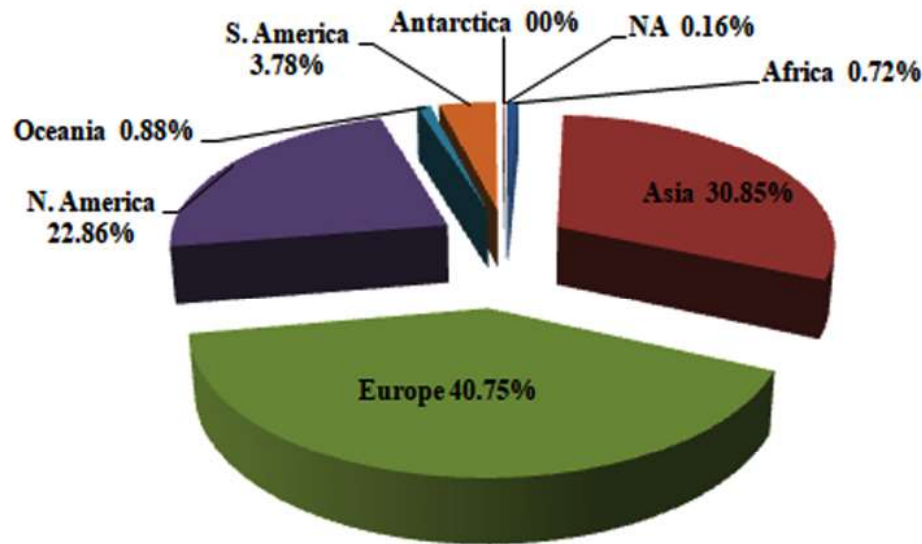
Fig. 2: Country wise Distribution of Articles

It can be observed from Table 2 and Fig. 2 that, there were as many as 70 countries carrying out research and produced 1061 articles. Table 5.2 provides ranked List of countries contributing to this field, the number of publications of each country and their share in percentages is the top producing country is USA with 922 publications (20.85%) of the total output. Therefore, the hypothesis, "USA is the high productive country" (Hypotheses No.2) is valid. It can be stated that USA being the publishing country the output is more than other country.

Authorship and Collaboration Trend:

Gupta, D.K. Authorship is an observable phenomenon reflecting the contemporary scholarly practices clearly showing the communication, productivity and collaborative patterns and influences among researchers even though their quantities and qualities are not well understood. Collaboration in research is said to have taken

place when 2 or more persons work together on a scientific problem of project and effort, both

physical and intellect.

Table 3: Authorship and Collaboration Trend

Year	Number of Papers With Various Authorship							Total
	Single	2	3	4	5	6	More than 6	
2014	30	61	53	46	28	19	38	275
2015	16	47	41	42	18	17	29	210
2016	16	46	54	37	20	17	23	213
2017	23	38	43	34	26	7	25	196
2018	16	26	29	32	19	16	29	167
Total	101	218	220	191	111	76	144	1061
%	9.52	20.55	20.74	18.00	10.46	7.16	13.57	100.00
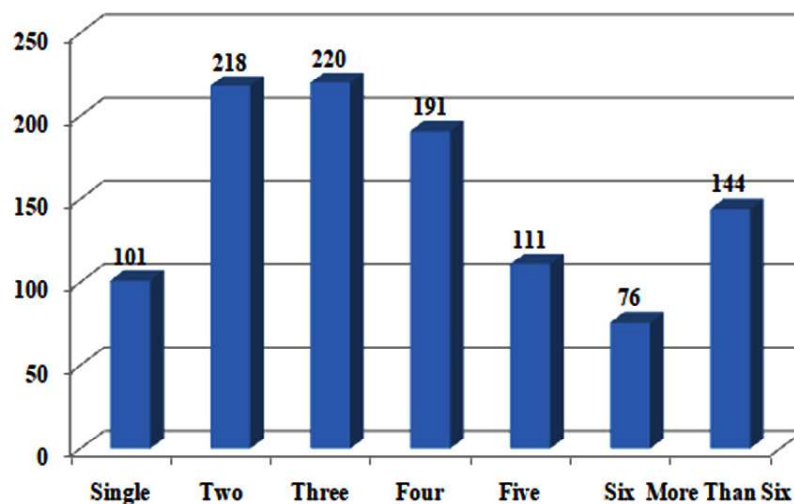
Fig. 3: Authorship and Collaboration Trend

It can be observed from Table 3 and Fig. 3 that, year wise authorship and collaboration trend is given in table 3 Authorship trend is towards multiple authored papers. Single authored papers accounted for 101 (9.52%). ***Therefore, the hypothesis, "Authorship trend is towards multiple authored papers. (Hypothesis No.1) is valid.***

International Collaboration Pattern of Articles:

The International collaborative production of articles is the simultaneous action of many people who try to combine their ideas to make a new one. In fact collaborative is the process where two or more people work together toward a common goal and they don't required leadership.

Table 4: International Collaboration Pattern of Articles

Year	Single	Collaboration	Total No. of Publication
2014	204	71	275
2015	157	53	210
2016	171	42	213
2017	141	55	196
2018	119	48	167
Total	792	269	1061

The distribution of the collaboration of the various countries and their institutions respectively are given in the further table.

The distribution of the collaboration of the various countries and their institutions respectively are given in the further table. It can be observed

from the table 4 and table 4 that, out of 1061 articles, 269 articles are written in collaboration with International Institutions.

The country which has maximum collaboration is USA (224), Russia (118) China (115) UK (82), France and India (69) each, Brazil (44) Belgium (40) Germany (38) Argentina (36) Japan (34) Spain (31) Czech Republic and Greece (30) each, Austria (29), Italy and Poland (25) each, Korea (24) Croatia (22) Finland (21) Ukraine (20) Republic of Korea (16) Mexico (14) Switzerland (11) Saudi Arabia (10) each, Australia, Ireland and Slovenia (8), Canada(5), Denmark, Nepal, Portugal, and Romania (4) each,

Ethiopia, Hungary, Iran, Norway, Republic of Iran, Slovak Republic and South Korea (3) each, Bulgaria, South Africa, Trinidad and Tobago and Turkey (2) each, Algeria, Colombia, Egypt, Islands, Leuven, Madrid, Netherlands, Sweden, Taiwan, Netherlands, Wales (one) each, respectively.

Most Productive Author:

An author is defined both as "the person who originates or gives existence to anything" and as "one who sets forth written statements" in the Oxford English Dictionary.

Table 5: Most Productive Author

Sr. No.	Author	Country	Total	Percentage	Rank
1	Y. Yan	China	62	1.40	1
2	Janos Lichtenberger	Hungary	37	0.84	2
3	A. J. Vieau	France	29	0.66	3
4	M. Goto	Japan	28	0.63	4
5	C. A. Kletzing	USA	22	0.50	5
6	T. Yamamoto	Japan	20	0.45	6
7	N. Mujić	Bosnia and Herzegovina	19	0.43	7
8	M. Wiesmann	Norway	18	0.41	8
9	W. Schmutz	Switzerland	17	0.38	9
10	C. L. Li	C. L. Li	16	0.36	10
11	Joanne Choi	USA	16	0.36	10
12	Anatolyi Stepanov	Russia	15	0.34	11
13	E. Sanchez Diaz	France	15	0.34	11
14	Šimon Mackovjak	Slovak Republic	15	0.34	11
15	J. Trujillo Bueno	Spain	14	0.32	12
16	Theresa Lueftinger	Austria	13	0.29	13
17	D. Odstrčil	USA	13	0.29	13
18	D. Sluse	Belgium	13	0.29	13
19	H.-S. Yu	USA	12	0.27	14
20	M. Janvier	UK	12	0.27	14
21	T. Žic	Croatia	12	0.27	14
22	F. Y. Xu	China	12	0.27	14
23	I. Zouganelis	Spain	12	0.27	14
24	A. B. Sanin	Russia	12	0.27	14
25	Eleven Author 11x8	-	88	88.00	15
26	Ten Author 10x13	-	130	130.00	16
27	Nine Author 9x17	-	153	3.46	17
28	Eight Author 8x39	-	312	7.06	18
29	Seven Author 7x42	-	294	6.65	19
30	Six Author 6x76	-	456	10.31	20

31	Five Author 5x113	-	565	12.78	21
32	Four Author 4x196	-	784	17.73	22
33	Three Author 3x221	-	663	14.99	23
34	Two Author 2x213	-	426	9.63	24
35	Single Author 1x97	-	97	2.19	25
	Total	-	4422	100.00	-

It can be observed from Table 5 that, the most productive authors are Janos Y. Yan (China) who had the highest number (62) of the publication, Janos Lichtenberger (Hungary), with (37) publication. A. J. Vieau (France) with 29 publications each. Eight Authors with 312 publications. Seven Authors with 294 publications. Six Authors with 456 publications. Five Authors with 565 publications. Four Authors with 784 publications. Three Authors with 663 publications. Two Authors with 426 publications. Single Authors with 97 publications.

Institutes wise distribution of articles published

Institution is a society or organization for the promotion of science, education etc. An institute is a permanent organizational body created for a certain purpose. Often it is a research organization (research institution) created to do research on specific topics. An institute can also be a professional body. In some countries institutes can be part of a university or other institution of higher education, either as a group of departments or an autonomous educational institution without a classic full university status such as a University Institute.

Table 6: Institutes wise distribution of articles

Sr. No.	Institute	No. of Publication	Percentage	Rank
1	Indian Institute of Astrophysics, Bangalore, India	55	1.24	1
2	Institute of Solar-Terrestrial Physics SB RAS, Irkutsk, Russia	53	1.20	2
3	Shandong Provincial Key Laboratory of Optical Astronomy and Solar-Terrestrial Environment, School of Space Science and Physics, Shandong University at Weihai, Weihai, China	51	1.15	3
4	NASA Goddard Space Flight Center, Greenbelt, USA	46	1.04	4
5	National Solar Observatory, Tucson, USA	44	1.00	5
6	Yunnan Observatories, Chinese Academy of Sciences, Kunming, China	42	0.95	6
7	W.W. Hansen Experimental Physics Laboratory, Stanford University, Stanford, USA	41	0.93	7
	Truncated			

It can be observed from Table 6 that, there were 4422 organizations involved in research activity. The organization that have contributed in the publication during 2014 - 2018. Indian Institute of Astrophysics, Bangalore, India topped the list with 55 publication, Institute of Solar Terrestrial Physics SB RAS, Irkutsk, Russia second number with 53 publication, Shandong Provincial Key Laboratory of Optical Astronomy and Solar-Terrestrial Environment, School of Space Science and Physics, Shandong University at Weihai, China is the Third rank 51 publication. Two Institutes with 277 publications each, Three Institutes with 127 publications each, Four Institutes with 84 publications each, Five institutes with 44 publications Six Institutes with 39 publications each, seven institutes with 31 publications each and 547 institutions with single publication each. Therefore the hypothesis "Majority of the affiliated institution are from USA (Hypothesis No.3) is valid".

Distribution of Literature In Various Channels of Communication

Channel, in communications, refers to the medium used to convey information from a sender (or transmitter) to a receiver. Researchers communicated their publication through variety of communication channels.

Table 7: Distribution of literature in various Channels of Communication

Sr. No.	Document Type	Number of Publication	Percentage
1	Original Paper	828	78.04
2	Sunspot Number Recalibration	36	3.39
3	Earth affecting Solar Transients	35	3.30
4	Waves in the Solar Corona	21	1.98
5	Solar Cycle 24 as seen by SDO	17	1.60
6	Solar Origins of Space Weather and Space Climate	17	1.60
7	New Eyes Looking At Solar Activity	16	1.51
8	Solar and Stellar Flares	16	1.51
9	Radio and Space based Observations	15	1.41
10	Radio Heliophysics: Science and Forecasting	15	1.41
11	Erratum	13	1.23
12	Editorial	9	0.75
13	Probing the Sun: Inside and Out	8	0.75
14	Memoirs	5	0.47
15	Correction	4	0.38
16	Invited Review	3	0.28
17	Obituary	3	0.28
	Total	**1061**	**100**

It can be observed from table no. 07 that, Researchers communicated their publication through variety of communication channels, 828 (78.04%) of the Literature was published in Original Paper followed by Sunspot Number Recalibration 36 (3.39%), Earth affecting Solar Transients 35 (3.30%), Waves in the Solar Corona 21 (1.98%), Solar Cycle 24 as seen by SDO and Solar Origins of Space Weather and Space Climate 17 (1.60%), New Eyes Looking At Solar Activity and Solar and Stellar Flares 16 (1.51%), Radio and Space based Observations and Radio Heliophysics Science and Forecasting 15 (1.41%), Erratum 13 (1.23%), Editorial and Probing the Sun: Inside and Out 8 (0.75), Memoirs 5 (0.47%), Correction 4 (0.38%), Invited Review and Obituary (0.28%) The total content journal of solar physics that is, Original Paper, Sunspot Number Recalibration, Earth affecting Solar Transients, etc. is analyzed.

Distribution of Keywords

A word occurring natural language text of documents or its surrogate that is considered significant for indexing and information retrieval. Keywords are the words that are used to reveal the internal structure of an author's reasoning. Keywords are one of the best scientometric indicators to understand the graspinstantaneously the thought content of the articles and to find out the growth of the subject field. By analyzing the keywords appeared either on the title or article will help in knowing in which direction the knowledge grows. Keyword is a word that succinctly and accurately describes the subject discussed in a document.

Table 8: Keywords

Sr. No.	Keywords	Total	Percentage	Rank
1	Coronal mass ejections	97	2.52	1
2	Solar wind	77	2.00	2
3	Magnetic fields	60	1.56	3
4	Sunspots	60	1.56	3
5	Solar cycle	58	1.51	4
6	Solar cycle observations	56	1.45	5

7	Flares	55	1.43	6
8	Corona	48	1.25	7
9	Instrumentation and data management	44	1.14	8
10	Magnetic fields photosphere	43	1.12	9
	Truncated			

Journal of Solar Physics Founded in 1967, this has been the principal journal for the publication of fundamental research on the Sun for five decades. All aspects of solar physics are reported on. Coverage ranges from the internal structure of the Sun and its evolution to the outer corona and solar wind in interplanetary space. Solar Physics publishes papers on solar terrestrial physics and on stellar research as well, where they contribute directly to our understanding of the Sun.

The average numbers of articles published per year were 100. The highest numbers of Articles (275) were produced in 2014. There were as many as 70 countries carrying out research and produced 1061 articles. USA is the top producing country with 922 publications (36.98) of the total output. Authorship trend is towards multiple authored papers. Single authored papers accounted for 9.52 %. Out of 1061 articles, 76 articles (7.16%) are written in collaboration with International Institutions. The collaboration is observed with two countries and three countries. The most productive author is Y. Yan who had the highest number (62) of the publication. There were 4422 organizations involved in research activity. Researchers communicated their publication through variety of communication channels, 828(78.04%) of the Literature was published in Original Paper followed by Sunspot Number Recalibration 36(3.39%), Earth affecting Solar Transients 35 (3.30%), Waves in the Solar Corona 21(1.98%), Solar Cycle 24 as seen by SDO and Solar Origins of Space Weather and Space Climate 17(1.60%), New Eyes Looking At Solar Activity and Solar and Stellar Flares 16(1.51%), Radio and Space based Observations and Radio Heliophysics Science and Forecasting 15(1.41%), Erratum 13(1.23%), Editorial and Probing the Sun: Inside and Out 8(0.75), Memoirs 5(0.47%), Correction 4(0.38), Invited Review and Obituary (0.28%), The total content journal of solar physics that is, Original Paper, Sunspot Number Recalibration, Earth affecting Solar Transients, etc. Keywords are one of that best scientometric indicators to understand the grasp instantaneously the thought content of the articles and to find out the growth of the subject filed. By analyzing the keywords appeared either on the title or article will help in knowing in which direction the knowledge grows. The high frequency keywords were Coronal mass ejections 97 (2.52%), Solar wind 77 (2%), Magnetic fields and Sunspots 60 (1.56%), Solar cycle 58 (1.51%), Solar cycle observations 56 (1.45), Table 8 gives a list of keywords appeared in the articles.

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Citation Analysis of References Appended in Doctoral Theses in Library & Information Science Submitted to Shodhganga

Naveen N

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Abstract

Citation analysis is one of the popular techniques of bibliometric study that aids scholars in the identification of core journals in their respective domain. The present study is based on 1399 citations used in the 10 doctoral theses of the library and information science department of University of Calcutta, Mangalore University, Manipur University, Mizoram University and Gauhati University that are deposited to Shodhganga from 2020. The purpose of this study is to determine the most favored information source, year-wise distribution of citations as well as to prepare ranking list of core Journals in library and information science based on citation frequency of that journal. Data were gathered and analyzed based on pre-determined criteria. Finally conclusion has been drawn from the data analyzed.

Keywords: Citation analysis; Library and Information science; Bibliometric study; Doctoral Theses.

INTRODUCTION

Citations are an important element of any research publication. It is the process by which scholars consult previous research and cite it in their study effort. Citation analysis is an important technique in the bibliometric study of literature that examines the relationship between the cited documents and can thus be used to indirectly measure document utilization. Citation analysis can be used to measure a journal's authorship pattern, year-by-year citation frequency, publication trend, and subject relationship. It also helps identify the core document for a specific subject domain. Management, education, information technology, and other interrelated disciplines are utilized in the practice of library and information science. To conduct qualitative research, a library and information science (LIS) researcher must identify the core documents in their field of study. Citation analysis assists librarians in more identifying the user's actual need. It is used by librarians to analyze their collection, assisting them in document selection and deselect ion in order to build an appropriate collection for their users. The current study's goal is to examine the citations used in Ph.D theses by University of Calcutta, Mangalore University, and Manipur University, Mizoram University and Gauhati University Library and Information

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Science researchers to determine which ones are the most common. Knowing which resources PhD students require and prefer will absolutely help a librarian provide us with a better selection of resources. 'Shodhganga' is the digital repository of Indian Electronic Theses and Dissertations setup by the Inflibnet Centre. Shodhganga stands for the research of Indian intellectual output stored in a repository hosted and maintained by the Inflibnet centre (http://shodhganga.inflibnet.ac.in/moredetails/newmoredetails/about.html).

LITERATURE REVIEW

Citation is defined by **Smith, Linda C**. (1981) as a relationship between the cited and citing documents. He discuss the development of citation analysis as a research method as well its application and future research prospects. With development of computer citation analysis has been improved through the production of printed indexes and availability of citation data in machine readable form. **Nishtha, Anilkuma & Shya, Rajaram** (2013) examines the citations used by doctoral students of physical research laboratory and discovered that majority of the researchers used e-resources,. Journal articles are most preferred followed by books. Their study aids better understanding and management of library resources by librarian. **Kumari, K kusuma & Doraswamy, M**. (2014) conducted a similar study with PhD theses in civil engineering to identify the source of information , authorship pattern, publication pattern and the core journals of civil engineering. Their result reveal that journals are most favoured source of information for civil engineers, most of the journals are co-authored and published in between 1981 and 2010. **Ramanjaneyulu H.** (2015) revels that citation analysis is one of the major technique of bibliometric studies. It accesses how often a document is used and relationship between the document and author. It has now became a widely used technique for determining the impact, authorship pattern, publication trend. It is commonly used method to find out the core journal in concerned subject. **M. Thamaraiselvi et al.** (2016) conducted a citation analysis of 6 PhD theses in library and information science to identify the most cited source of information, authorship pattern, rank list of core journal and their country wise distribution. He found that Journals by single author are most popular source of information.

OBJECTIVE OF THE STUDY

The present study is conducted with following specific objectives:

- To identified the most preferred source of information and their range of publication year.

- To know the number of citations used by the research scholars in LIS.

- To identify the frequency of citation and prepare a rank list of core journal of library and information science.

METHODOLOGY

For the present study data has was collected from 10 PhD thesis submitted by the department of Library and Information Science University of Calcutta, Mangalore University, Manipur University, Mizoram University and Gauhati University to Shodhganga digital repository from 2020. The references from theses were collected, tabulated and analyzed using Ms-Excel.

RESULTS AND DISCUSSION

Table 1: Research areas of doctoral theses in LIS and the year of submission

Sl. No.	Name of Universities	No. of Theses Uploaded	Year of Submission	Research Area
1	University of Calcutta	1	2020	Assessing influence of journals and researchers in scholarly communication
2	Mangalore University	1	2020	Use of N-List resources by faculty and students of Post Graduate centers affiliated to Mangalore University
3	Manipur University	2	2020	Modernizing college libraries with E-Resources under N-List programme in Manipur
				Preserving the Past Heritage to create the future in digital age: Role of Libraries, Archives, Museums and Archaeological institutions in Manipur

4	Mizoram University	4	2020	Bibliometric study of Doctoral Dissertations in Library and Information science in North East India during 2006-2015
				Use of Social Networking sites by teachers and students of Colleges in Aizawl: an Evaluative study
				Library Automation Skills of College Librarians using SOUL 2.0 in North East India
				Information Literacy skills among PG Students of Social Sciences of Mizoram University and Tezpur University: A Comparative study
5	Gauhati University	2	2020	Use of ICT in the Libraries of Medical Institutions in North East India: An Analytical Study
				Ontology on Traditional Dances of Assam for the Semantic Web with Special Reference to the Dances of Rabha Community

Table 1 show that Mizoram University had uploaded the maximum numbers of theses i.e. 4 in number followed by Manipur and Gauhati Universities having 2 each. Mangalore University and University of Calcutta uploaded the least number of theses having 1 each. Different areas of LIS were covered in the doctoral theses of these universities. Maximum theses were submitted in 2020.

Table 2: From wise distribution of cited documents of theses of the 5 Universities

Sl. No.	Form of Cited Documents	Calcutta	Mangalore	Manipur		Mizoram				Gauhati	
1	Journal Citations	206	46	44	84	83	76	34	112	142	40
2	Book Citations	30	17	5	10	21	7	0	13	4	31
3	Web based E-Resources	7	13	22	18	38	20	2	60	39	56
4	Seminar/Conference Proceedings Citations	3	10	18	5	3	5	0	10	3	27
5	Reports Citations	1	2	2	0	0	0	0	0	0	0
6	Theses/Dissertations Citations	0	0	3	4	4	0	0	4	2	0
7	Dictionary	0	2	0	0	0	0	0	0	0	1
8	Manuscripts	0	0	0	3	0	0	0	0	0	0
9	Souvenirs/Bulletins/Guidebooks	0	0	0	7	0	0	0	0	0	0
-	Total	247	90	94	131	149	108	36	199	190	155

The above table shows that Mizoram University theses have the highest number of journal citations (149 and 108, 36, 199). Gauhati University theses have the highest number of Web based E-Resources (39 and 56). University of Calcutta theses have the highest number of book citations (30 and 17). Reports, theses, Newaletters are the least cited documents. University of Calcutta thesis has the highest number of cited documents followed by thesis of Mangalore University.

Table 3: Form wise distribution of total cited documents

| Sl. No.	Form of Cited Documents	Total No. of Citations	Cumulative Citations	Percentage	Cumulative Percentage
1	Journal Citations	867	867	61.97	61.97
2	Book Citations	138	1005	9.86	71.83
3	Web based E-Resources	275	1280	19.65	91.49
4	Seminar/Conference Proceedings Citations	84	1364	6	97.49
5	Reports Citations	5	1369	0.35	97.85
6	Theses/ Dissertations Citations	17	1386	1.21	99.07
7	Dictionary	3	1389	0.21	99.28
8	Manuscripts	3	1392	0.21	99.49
9	Souvenirs/Bulletins/ Guidebooks	7	1399	0.5	100
	Total	**1399**		**100**	
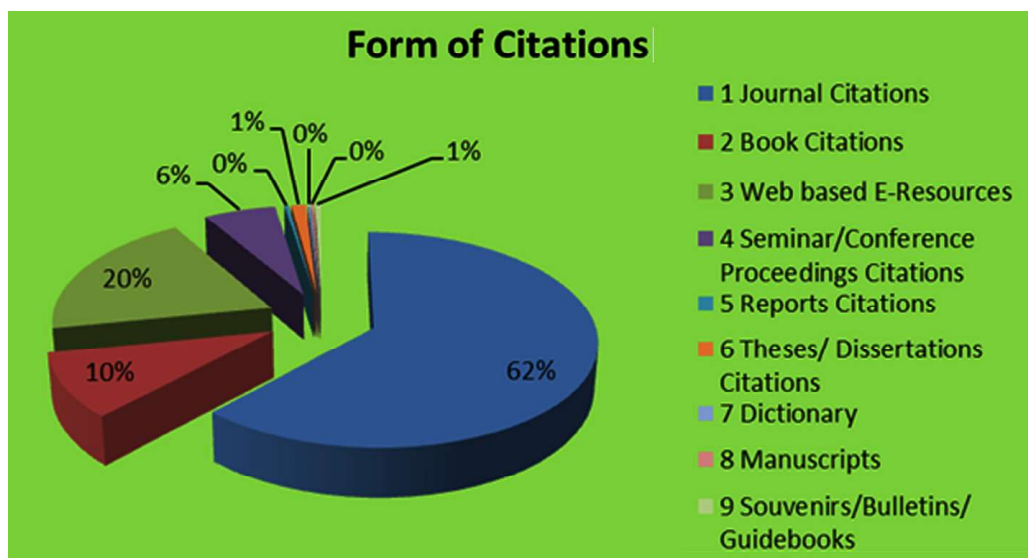
Table 3 and fig. 1 clearly depicts that maximum cited documents are the journals (61.97%) followed by Web based E-Resources (19.65%), Books (9.86%) and Seminar/Conference Proceedings Citations (6.00%). The least cited documents are the Newsletters followed by theses/dissertations and reports. This shows that researchers in the field of LIS mainly concentrate on printed journals for collecting information. Books are also considered as an important source of information in the research work. E-resources are found to be referred less compared to printed journals and books.

Table 4: Ranking of journals by frequency of citations

| Rank No.	Name of Journal	Country	No. of Citations	Cumulative Citations	Percentage	Cumulative Percentage
1	Scientometrics	India	53	53	31.92	31.92
2	Journal of the American Society for Information Science	United States of America	21	74	12.65	44.57
3	Journal of Cultural Heritage Management & Sustainable Development	India	17	91	10.24	54.81
4	A Journal of Library & Information Science	India	14	105	8.43	63.25
4	Journal of Informetrics	India	14	119	8.43	71.68
5	International Journal of Digital Library services	India	12	131	7.22	78.91
6	DESIDOC Journal of Library & Information Technology	India	10	141	6.02	84.93
7	Annals of Library & Information Studies	India	9	150	5.42	90.36
7	International Journal of Library & Information Science	United States of America	9	159	5.42	95.78
8	Library Philosophy & Practice (E-Journal)	United States of America	7	166	4.21	100

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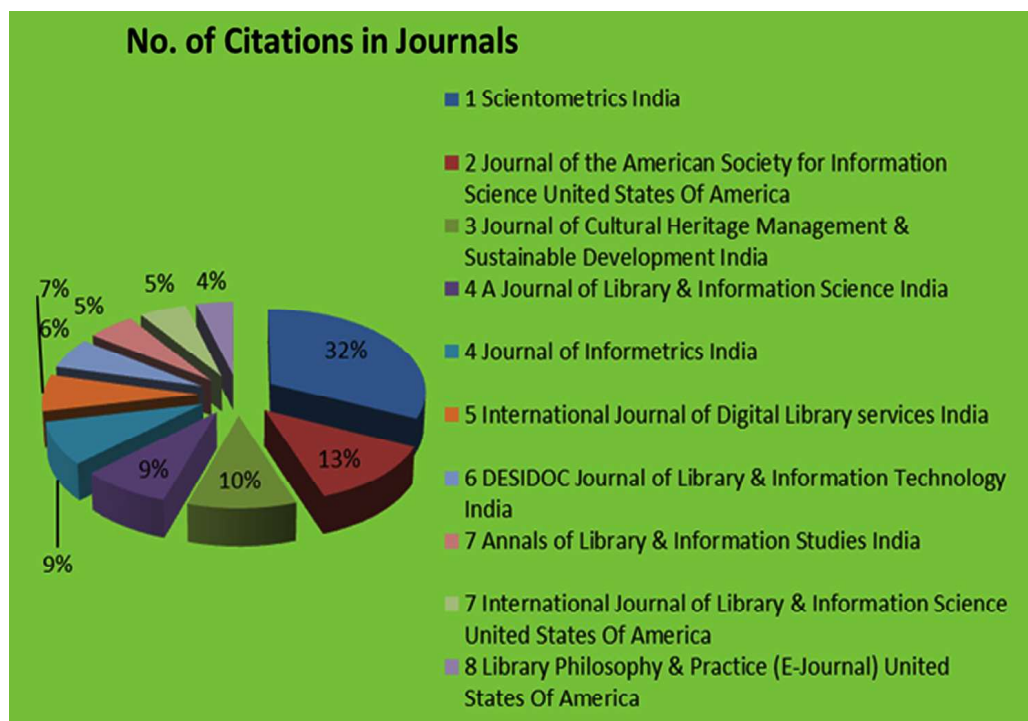
It is evident from Table 4 and Fig. 2 that Scientometrics is the most cited journals (31.92%) and is ranked 1st followed by Journal of the American Society for Information Science (12.65%). Journal of Cultural Heritage Management & Sustainable Development (10.24%) is ranked 3rd. The other journals which were cited frequently are a Journal of Library & Information Science (8.43%), Journal of Informetrics (8.43%), International Journal of Digital Library services (7.22%), DESIDOC Journal of Library & Information Technology (6.02%), Annals of Library & Information Studies (5.42%), International Journal of Library & Information Science (5.42%) etc. Also it is evident that Indian Journals are cited mostly compared to Indian Journals.

Table 5: Distribution of citation according to year of publication of document referred

Year Citations	No. of Citations	Cumulative	Percentage	Cumulative Percentage
1900-1949	19	19	2.07	2.07
1950-1959	10	29	1.09	3.16
1960-1969	14	43	1.52	4.68
1970-1979	12	55	1.3	5.99
1980-1989	19	74	2.07	8.06
1990-1999	47	121	5.12	13.19
2000-2009	215	336	23.44	36.64
2010-2020	581	917	63.35	100
Total	**917**		**100**	**-**
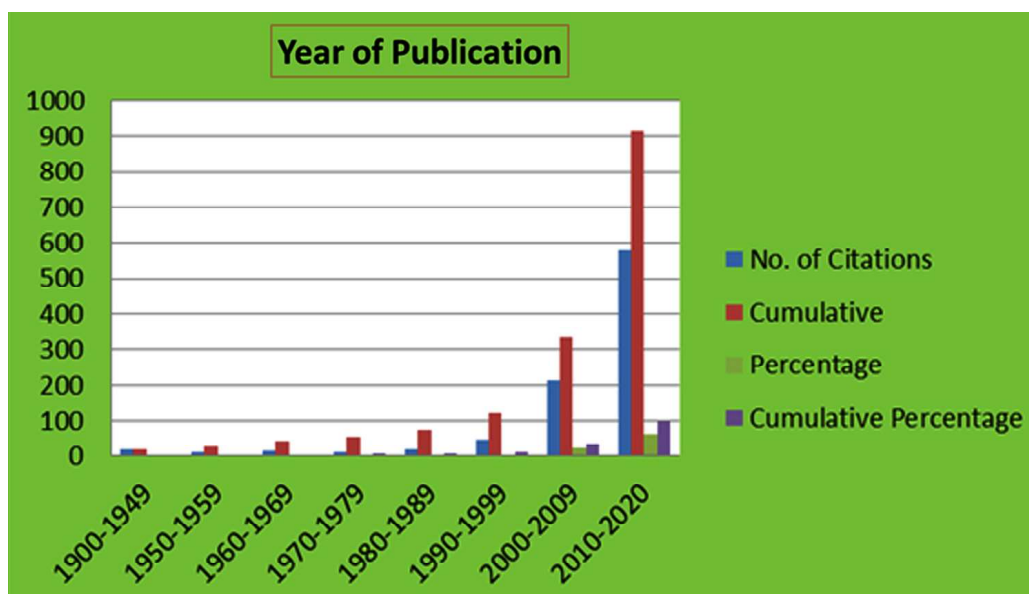
The above table and figure shows that maximum numbers of documents cited were published during 2010-2020 accounting to 63.35% followed by documents published during 2000-2009 accounting to 23.44%. Least cited documents were published during 1990-1999 (5.12%). 2.07% of the documents cited were published during 1980-1989 and 1900-1949. Also out of the total of 1399 citations, 917 citations had their publication date and the rest i.e. 482 citations had no publication date most of which were website citations.

RESULTS

From the above analyzed data following findings has been drawn out

1. Most preferred source of information by research scholars in library and information science is journals which accounts for 61.97% (867) of total bibliographical sources, (From Table 3) and most of the cited materials used by the researchers in their theses was published in between 2010-2020. (From Table 5)

2. The Journals articles used by the author are from different journals. Scientometrics is most cited journal by Library and Information Science researchers with 53 i.e. 31.92% of total journal citation in 10 theses examined. Second place is occupied by Journal of the American Society for Information Science, which has been cited 21(12.65%) times and in third place by Journal of Cultural Heritage Management & Sustainable Development which has been cited 17(10.24%) times by the researches. (From Table 4)

3. The areas covered in the doctoral theses are: (i) Library Automation Skills (ii) Use of Social Networking sites (iii) Bibliometric study of Doctoral Dissertations (iv) Use of N-List resources (v) Use of ICT in the Libraries of Medical Institutions (vi) Preserving the Past Heritage to create the future in digital age (vii) Ontology on Traditional Dances of Assam for the Semantic Web with Special Reference (viii) LIS education. Most of the theses were submitted in the year 2020.

CONCLUSION

Citations are increasingly used as a performance indicator in the context of research evaluation. It acts as a pathfinder to gauge the impact of scientific literature. Citation analysis of theses can be used a tool for evaluating usage statistics of the library collection for research purposes. Although it has certain limitations but it can quantitatively measure the nature of resources being used by researchers thus allowing librarian to meet the actual user need. Specifically this study has provided some useful information about the core journals used by researchers in Library and Information science field.

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Citation Analysis of Doctoral Theses in LIS Uploaded on Shodhganga by Universities of South Region in India

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Abstract

The research paper deals with the citation analysis of doctoral theses of library and information science submitted to the South Region Universities with the special reference to Shodhganga website. This study is based on 968 total citations in the 10 doctoral theses. The purpose of this study was to identify the most cited sources of Information, rank list of core journals and country-wise publication in library and information science. The study revealed that 77.59% of total citations are cited by the journals followed by web-based sources with 11.69% followed by book citation with 4.02% citations. The library philosophy and practice has ranked first with 54 citations with 22.31% of total citations and 16.11% of citations of Scientometrics was ranked second. The results of citation analysis can be used to evaluate the importance and relevance of a publication, determine the impact of a researcher or researcher group, and identify key authors and research areas in a filed. It is commonly used in the field of academic research, but can also be applied to other areas such as patent analysis and media analysis.

Keywords: Doctoral theses; LIS; University of South region in India; Shodhganga ETD repository.

INTRODUCTION

Citation analysis is an important area of study. Citation analysis is the study of references within one text to another and the location of those references. Citation analysis can assist you in understanding topic relationships, author effectiveness, publishing trends, and other topics. One of the most common bibliographic techniques is citation analysis. Citation analysis examines and quantifies the frequency, patterns, and bibliographic sources used to connect researchers to other scientific studies. One of the most popular methods for locating core journals for a subject is through citation analysis. It also displays author patrons, country publications, and documents cited by year.As a result, it aids in determining the quality of the references used in dissertations. The Inflibnet Center has developed Shodhaganga, a website for electronically evaluating papers and papers from all Indian universities. When writing a research paper, review article, or dissertation, researchers or scholars should always refer to previous work relevant to their field and analyse

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citations to determine the types of documents, topics, and topics used by scholars to identify distributions, rankings, and so on comprehend the half-life duration of the journal documents used.

The current study covers doctoral dissertations in library and information science uploaded to the Shodganga ETD repository by universities in southern region of India. Universities included in this study are Alagappa University, Annamalai University and Tumkur University. Examining the doctoral dissertation bibliographies of these universities gives insight into the types of sources used by researchers in southern region in India.

LITERATURE REVIEW

According to survey of the literature, various studies have been done on citation analysis of doctoral theses, Citation analysis is a bibliometric techniques, it is structure and direction it is evaluate the usefulness of documents as well as the relationship between their author and their documents. Citation analysis is the become the one of most popular methods for the studying subject relationship patterns, impact and publication trends in the any research activity.

Citation analysis has been extensively studied in the field of bibliometrics, which uses quantitative approaches to survey the scholarly literature. The history and development of citation analysis, the many metrics and methods used, and strengths and weaknesses of the strategies are all covered in the literature review.

The history of citation analysis can be traced back to the early 20th century with the development of the Science Citation Index (SCI) bu Eugene Garfield in the 1960s. The SCI was the first database to provide large-scale citation information and was a major breakthrough in bibliometrics. Since the, many other databases and software tools have been developed to support citation analysis. Web of science, scopus, google scholar.

In conclusion, Citation analysis is a popular method in academic research for determining the impact and influence of publications or researchers. It has a long history, and various methods, metrics and tools for citation analysis have been developed. However it has limitations and biases of its own and should be used with caution.

OBJECTIVES

- To know about the areas covered in LIS research by the scholars of the universities of south region

- To determine the principal forms of literature used in dissertations by doctoral theses

- To prepare a ranked list of periodicals based on frequency od use by doctoral students

- To determine country wise distribution of literature used by doctoral students

- To know the number of citations used by the research scholars in LISc

SCOPE OF THE STUDY

The research is based on theses posted on Shodhganga by universities in southern India, such as Alagappa University, Annamalai University, and Tumkur University. The repository housed ten theses, all of which were heavily cited. The field of study chosen is library and information science.

METHODOLOGY

The bibliographies and references for all Ten doctoral theses found at the end of the chapters were downloaded and their citation styles were examined (http://shodhganga.inflibnet.ac.in). These citations served as the primary source of data and form the foundations of the current study.

LIMITATION OF THE STUDY

The study is limited to the theses of Library and Information Science that have been uploaded to the Shodhganga ETD repository by universities in India's southern region. The Three Universities of South India discovered only ten doctoral theses in the repository.

ANALYSES AND INTERPRETATION

Ten theses in the field of library and information science were uploaded by the three South Indian universities. The research studies covered a wide range of LIS topics, which are detailed below:

RESULTS AND DISCUSSION

Table 1: Research areas of doctoral theses in LIS and the year of submission

Sl. No.	Universities Name	No. of Theses Uploaded	Submission Year	Research Area
1	Alagappa University	6	2020	Perception and use of open access scholarly Communication a study among research Scholars of Karnataka state universities.
				Research output on chromosome Anomalies an empirical analysis.
				Mapping of marine pollution literature a scientometric study.
				Information seeking behavior and knowledge Sharing pattern among teachers of international Schools in Chennai an analytical study.
				Research output in seed technology a scientometric study.
				Scientometric analysis of leather research Output a global perspective.
2	Annamalai University	2	2020	Access and utilization pattern of e resources among the library users of selected colleges affiliated to solapur university a study.
				User awareness and perception on e resources and services a study with special reference to nursing colleges in madurai district.
3	Tumkur University	2	2020	E Resources perception and use by Ayurvedic medical college library users of North Karnataka.
				Trends decay and recovery of Web citations a comparative study of electronic theses and dissertations in sciences and social sciences.

Table 1 Show that Alagappa University had uploaded the maximum numbers of theses i.e. 6 number followed by Annamalai university and Tumkur Universities having 2 each.

Table 2: Form-wise distribution of cited documents of theses of the 3 universities

Sl. No	Form of Cited Documents	Alagappa University						Annamalai University		Tumkur University	
1	Journal Citations	75	80	37	10	106	72	84	42	117	128
2	Book Citations	13	5	10	3	5	1	-	-	1	1
3	Web based Citations	56	5	11	1	2	-	2	-	29	7
4	Seminar/conference proceedings Citations	-	2	1	2	1	2	1	34	2	-
5	Theses/Dissertations Citations	6	-	-	4	1	1	-	-	-	1
6	Dictionaries	7	-	-	-	-	-	-	-		
	Total	157	92	59	20	115	76	87	76	149	137

The above table shows that Tumkur University theses have the highest number of journal citations (128 and 117) Followed by Alagappa University (106 and 72). Annamalai University has journal citations (84 and 42). Alagappa University theses have highest number of book citations (13 and 10). Web based e-resources citations (56) are highest in theses of Alagappa University followed by Tumkur University (29), Theses and Dictionaries are the least cited documents. Annamalai University Proceedings has the highest number of cited documents followed by proceedings of Alagappauniversity and Tumkur University.

Table 3: Form wise distribution of total cited documents

Sl. No.	Form of Cited Documents	Total No. of Citations	Cumulative Citations	Percentage	Cumulative Percentage
1	Journal Citations	751	751	77.59	77.59
2	Book Citations	39	790	4.02	81.61

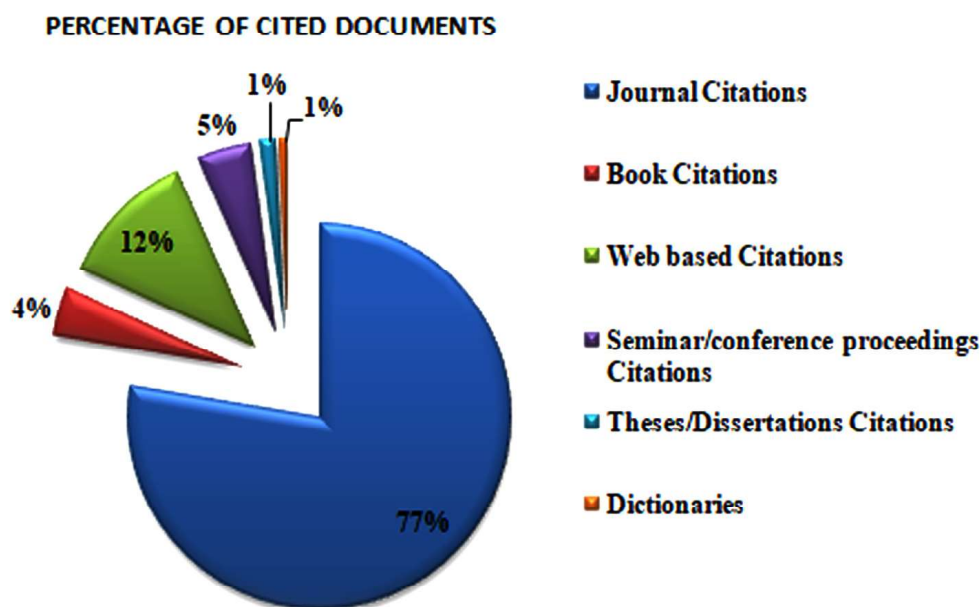|					
3	Web based Citations	113	903	11.69	93.28
4	Seminar/conference proceedings Citations	45	948	4.64	97.93
5	Theses/Dissertations Citations	13	961	1.34	99.27
6	Dictionaries	7	968	0.72	100
	Total	968		100	

Fig. 1: Showing form-wise distribution of cited documents

Table 3 and fig. 1 clearly show that journals (78%) are the most frequently cited documents, followed by books (4%), Web based (12%), and conference/seminar proceedings (5%). Dictionaries are the least cited documents, followed by theses/dissertations. This demonstrates that LIS researchers primarily rely on printed journals to gather information. Books are also regarded as a valuable source of information in research. E-resources are referred to less frequently than printed journals.

Table 4: Ranking of journals by frequency of citations

Rank No.	Name of the Journal	Country	No. of Citations	Cumulative Citations	Percentage	Cumulative Percentage
1	Library Philosophy and Practice	USA	54	54	22.31	22.31
2	Scientometrics	India	39	93	16.11	38.43
3	Desidoc Journal of Library & Information Technology	India	37	130	15.28	53.71
4	The Electronic Library	U.K	31	161	12.81	66.52
5	Annals of Library Science and Documentation	India	24	185	9.91	76.44
6	International Journal of Information Dissemination and Technology	India	22	207	9.09	85.53
7	International Research: Journal of Library & Information Science	India	14	221	5.79	91.32
8	International Journal of Digital Library Services	India	7	228	2.89	94.21
9	Library Herald	India	6	234	2.49	96.69
10	SRELS Journal of Information Management	India	4	238	1.66	98.34
10	New Library World	India	4	242	1.66	100

RANKING OF JOURNALS BY FREQUENCY OF CITATION

- 1 Library Philosophy and Practice USA
- 2 Scientometrics India
- 3 DESIDOC Journal of Library & Information Technology India
- 4 The Electronic Library U.K
- 5 Annals of Library Science and Documentation India
- 6 International Journal of Information Dissemination and Technology India
- 7 International Research : Journal of Library & Information Science India
- 8 International Journal of Digital Library Services India
- 9 Library Herald India
- 10 SRELS Journal of Information Management India
- 10 New Library World India

Fig. 2: Showing ranking of journals by frequency of citation

It is evident from Table 4 and Fig. 2 that Library Philosophy and Practice (22%) and is ranked 1st followed by Scientometrics (16%) ranked 2nd. DESIDOC Journal of Library and Information Technology (15 %) is ranked 3rd. The other journals which were cited frequently are The Electronic Library (13%), Annals of Library Science and Documentation (10%), International Journal of Information Dissemination and Technology (9.09%), International Research: Journal of Library & Information Science (6%) etc. Also it is evident that Indian Journals are cited mostly compared to foreign Journals.

Table 5: Year wise distribution of cited documents

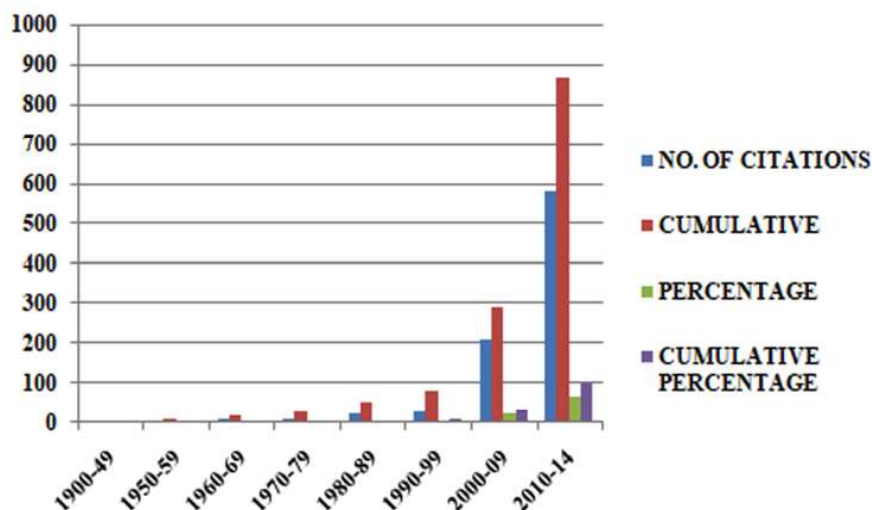| Year Citations	No. of Citations	Cumulative	Percentage	Cumulative Percentage
1900-49	7	7	0.8	0.8
1950-59	1	8	0.11	0.91
1960-69	10	18	1.14	2.06
1970-79	11	29	1.26	3.32
1980-89	23	52	2.63	5.96
1990-99	28	80	3.21	9.17
2000-09	210	290	24.08	33.25
2010-14	582	872	66.77	100
Total	**872**	**—**	**100**	**—**

Fig. 3: Showing year wise distribution of cited documents

RESULTS

The Finding of the study can be presented as follows:

- The doctoral theses cover the following topics :I) will discuss the digitization process in indian libraries, ii) will discuss digital resource management, iii) will discuss the growth of research outputs, iv) will discuss the use of online resources, and v) Doctoral dissertation citation pattern vi) Information seeking behaviour in a digital environment, vii) Library growth and development, viii) The role of state and district libraries) LIS education in 2020, the majority of theses were submitted.

- The doctoral theses that have been submitted Tumkur University has the highest number of journal citations among the three universities under consideration (128 and 117). Alagappa University theses have the most book citations (13 and 10). Alagappa University has the many e-resource citations. The Dictionaries, and Proceedings the least cited documents.

- The Printed journals have received the most citations in the ten doctoral theses (77.59%) following that books (4.02%), followed by web-based sources (11.69%). The least cited documents are the conference proceedings and dictionaries. Books are referred to less frequently than journals and web-based journals resources.

- Among the journal cited in the 10 doctoral theses, Library Philosophy and Practice (22%) and is ranked 1st ,Scientometrics (16%) ranked 2nd and DESIDOC Journal of Library and Information Technology (15%) is ranked 3rd, Also the study revealed that indian journals were cited mostly compared to foreign journals.

- Maximum numbers of documents cited were published during 2010-14 accounting to 66.77% followed by documents published during 2000-09 accounting to 24.08%. Least cited documents were published during 1900-49 (0.80%). 3.21% of the documents cited were published during 1990-99. Also out of the total of 872 citations, 900 citations had their publication date and the rest i.e. 28 citations had no publication date most of which were website citations.

CONCLUSION

The Findings show that researcher's at all

Three universities used a variety of Documents. Journals are most frequency cited in the overall citation pattern of LIS source documents. This emphasizes the significance of scientific literature and researchers' reliance on journals for their research activities. We can conclude from the research that the journals is the primary data source for accessing a large amount of information in the field of LIS. We also discovered that, when compared to other types of information, research reports, articles and dictionaries were the least used sources of information. This could be due to a lack of understanding about these sources, Journal ranking displays the most important journals that researchers frequently cite. Furthermore Indian journals are mentioned more frequently than journals from other countries. Books are used Significantly less than printed journals. This overview discusses the various types of sources required for library and information science research, as well as research methodologies and citation patterns.

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Citation Analysis of Doctoral Theses in Library and Information Science Uploaded on Shodhganga by Universites of Southern India

Umesha S N

Abstract

Society's advancement and growth are entirely dependent on ongoing research. Citation analysis is a widely used research method for assessing the quality of research in any field. A bibliometric study would be beneficial to all LIS members. The study's objectives were met by the use of citation analysis techniques. The data comes from the Shodhganga repository, an online repository of Indian theses. According to current research, the LIS field needs to promote collaborative research and improve the quality of articles published in Indian research journals, and Indian academics should pay more attention to peer-reviewed journals for publication so that their research is visible to readers.

Keywords: Biblometrics; Citation Analysis; LIS, Shodhganga; Indian Theses.

INTRODUCTION

A plethora of academic literature is available in many domains of knowledge, resulting in dynamic changes in the information demands of researchers in any subject. They require current information at a specific point in time. There are a variety of electronic and print information options available to meet their information needs. Searching for information is an essential component of any research project. Making the right decision about any research requires having the right information at the right time. I this dynamic shift in researcher needs make it difficult for library professionals and researchers to choose the most relevant journals and scholarly databases for subscription. Because librarians only have a limited amount of money to distribute, selecting good information sources is critical. To address these issues, librarians and academics conduct bibliometrics studies to determine the information needs of researchers. One of the most widely used research methodologies in

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the field of bibliometrics is citation analysis. The Citations system is based on the simple logic of resource utility: the more a resource is referenced in the literature, the more valuable it is in that field. Citation analysis is a popular research methodology or procedure that is used indirectly. It facilitates research citations of supplied references to other publications and journals and gives author credit for his work. Citation analysis identifies the current state of research in a specific field. It is compiled and evaluated from a variety of documents. Citation analysis also establishes a link between the cited and mentioned papers or documents.

REVIEW OF LITERATURE

A substantial amount of research has been conducted on citation analysis of doctoral theses, as revealed by a review of the literature.

In their study of bibliometric analysis in plant pathology, Lal and Panda (1996) compiled a ranked list of the 100 most frequently cited core periodicals. Buttlar (1999) conducted a citation analysis of 61 LIS dissertations and discovered that journal articles were cited more than books, book chapters, proceedings, theses, and other print resources, and that half of the works cited had been published within the previous ten years. In her study, Leiding (2005) discovered that the proportion of journal citations increased in comparison to book citations between 1993 and 2002. In their study, Olatokun and Makinda (2009a) discovered that journal articles andTextbooks received the most citations, while web resources received the fewest. In a study of 77 doctoral theses in sociology, Zafrunnisha (2012) discovered that books were cited the most when compared to other sources. In a similar study of doctoral theses from the Department of Economics, Nasir and Devendra Kumar (n.d.) discovered that books were the most commonly used form of citation.

IMPORTANCE OF THE STUDY

1. The study's findings will assist librarians and library science academics in good perspective the information needs of library and information science researchers.

2. Based on the study's findings, LIS departments and librarians may develop a much more accurate sampling development policy for their LIS collection.

OBJECTIVES OF THE STUDY

1. To gain knowledge about the areas covered in LIS research by scholars from Southern Indian universities.

2. To be familiar with the different types of information sources used by LIS researchers.

3. Count the number of citations used by LIS researchers.

4. Make a list of the top LIS journals, along with their geographical distribution.

5. Investigate the chronological arrangement of the cited documents.

SCOPE OF THE STUDY

The scope of the study is the study uploaded on shodhganga by universities in southern India, including Bangalore University, Mysore University, and Gulbarga University. A total of ten theses were discovered uploaded on the repository, and their citations were carefully examined. The chosen field of study is library and information science.

METHODOLOGY

All ten doctoral theses' bibliographies and references were downloaded and analysed to determine their citation pattern (http://shodhganga.inflibnet.ac.in). These citations served as the primary source of information and are used as the basis for the current study.

RESTRICTIONS OF THE STUDY

The study is limited to theses in LIS that universities in India's southern region have uploaded to the Shodhganga ETD repository. Only ten doctoral theses were discovered in the repository by the Three Universities of Southern India.

RESULTS AND DISCUSSION

Table 1: Research areas of Doctoral theses in LIS and there year Submission

Sl. No.	Name of Universites	No of Theses Uploaded	Year of Submission	Research Area
1	Bangalore University	3	2020	Application of web 3.0 Technology among medical college libraries in Karnataka A Study.
				Knowledge Sharing Among the Science faculties and researchers in university of Karnataka state an exploratory study.
				Awareness and use of information resources and services in private university libraries in Karnataka A study.
2	University of Mysore	4	2020	Citation analysis of research publications of faculty members and research scholars of University of Mysore and karnatak University.
				A study on the contributions of teachers of library and information science towards the profession in India.
				Trends in web citations in scholarly journals a study.
				Use of mobile devices for accessing electronic resources by the students of medical colleges in Karnataka a study.
3	Gulbarga University	3	2020	Public library as a motivator for the use of E governance services by citizens A case of Bangalore and kalburgi Districts Karnataka State.
				A study on library and information services of users in autonomous engineering college libraries in Karnataka.
				Status problems and prospects of library automation in first grade colleges in Karnataka state.

Table 1 show that University of Mysore had uploaded the maximum numbers of theses i.e. 4 in number followed by Bangalore University and Gulbarga Universities having 3 each. Different areas of LIS were covered in the doctoral theses of these universities. Maximum theses were submitted in 2020.

Table 2: Form wise distribution of cited documents of theses of the 3 universities

Sl. No.	Form of Cited Documents	Bangalore University			University of Mysore				Gulbarga University		
1	Journal Citations	99	107	157	150	64	31	52	50	82	86
2	Book Citations	5	0	7	3	0	0	0	2	2	2
3	Web based Citations	19	0	20	7	0	1	0	62	38	4
4	Seminar/conference proceedings Citations	13	1	6	4	1	1	0	7	1	2
5	Reports Citations	0	0	0	0	0	0	0	4	0	0
6	Theses/Dissertations Citations	0	0	0	4	0	0	0	1	0	0
7	Dictionary Citations	0	0	3	2	0	0	0	1	1	2
	Total	136	108	193	170	65	33	52	127	124	96

The above table shows that Bangalore University theses have the highest number of journal citations (157) and Book citations (12). Web based Citations (102) are highest in the theses of Gulbarga university. Reports, theses and Dictionary citations are the least cited documents. Bangalore University theses have highest number of cited documents.

Table 3: Form wise Distribution of total cited documents

Sl. No.	Form of Cited Documents	Total no. of citations	Cumulative Citations	Percentage	Cumulative Percentage
1	Journal Citations	878	878	79.8	79.52
2	Book Citations	21	899	1.9	81.43
3	Web based Citations	151	1050	13.6	95.1
4	Seminar/conference proceedings Citations	36	1086	3.2	98.36
5	Reports Citations	4	1090	0.3	98.73
6	Theses/Dissertations Citations	5	1095	0.4	99.18
7	Dictionary Citations	9	1104	0.8	100
	Total	1104	—	100	—
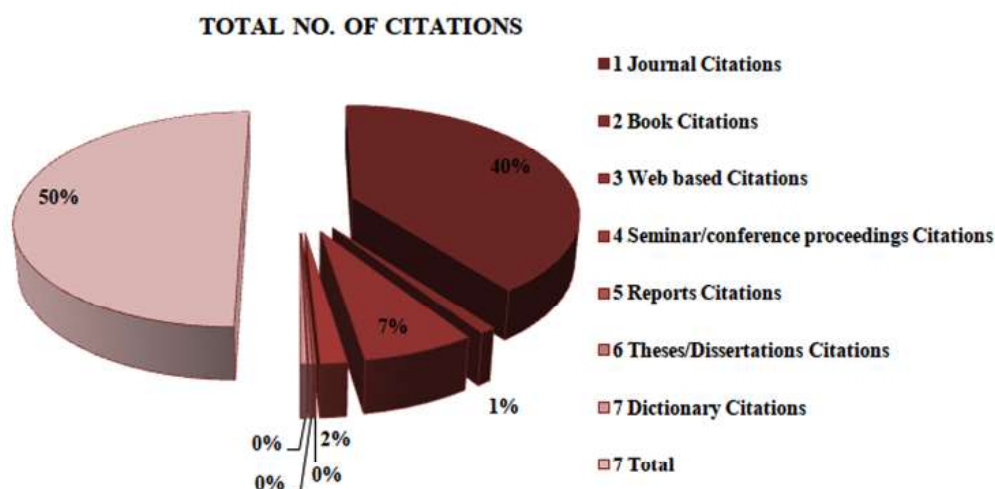
Table 3 and fig. 1 clearly depicts that maximum cited documents are the journals (80%) followed by books (2%), Web based (14%) and conference/ seminar proceedings (3%). The least cited documents are Dictionary followed by theses and dissertations and reports. This shows that researchers in the field of LIS mainly concentrate on printed journals for collecting information. Books are also considered as an important source of information in the research work. E-resources are found to be referred less compared to printed journals and books.

Table 4: Ranking of Journals by frequency of citations

| Rank No.	Name of the Journal	Country	No. of Citations	Cumulative Citations	Percentage	Cumulative Percentage
1	Annals of Library & Information Studies	India	24	24	23.3	23.3
2	The Electronic Library	U.K	17	41	16.5	39.8
3	DESIDOC Journal of Library and Information Science	India	15	56	14.5	54.3
4	Journal of Knowledge Management	Nigeria	10	66	9.7	64
5	Journal of Library & Information Science	U.S.A	9	75	8.7	72.8
6	Journal of Information Science	U.K	7	82	6.8	79.6
7	Journal of Documentation	U.K	6	88	5.8	85.4
8	The Journal of Academic Librarianship	U.K	5	93	4.8	90.2
8	IASLIC Bulletin	India	5	98	4.8	95.1
8	SRELS Journal of Information management	India	5	103	4.8	100
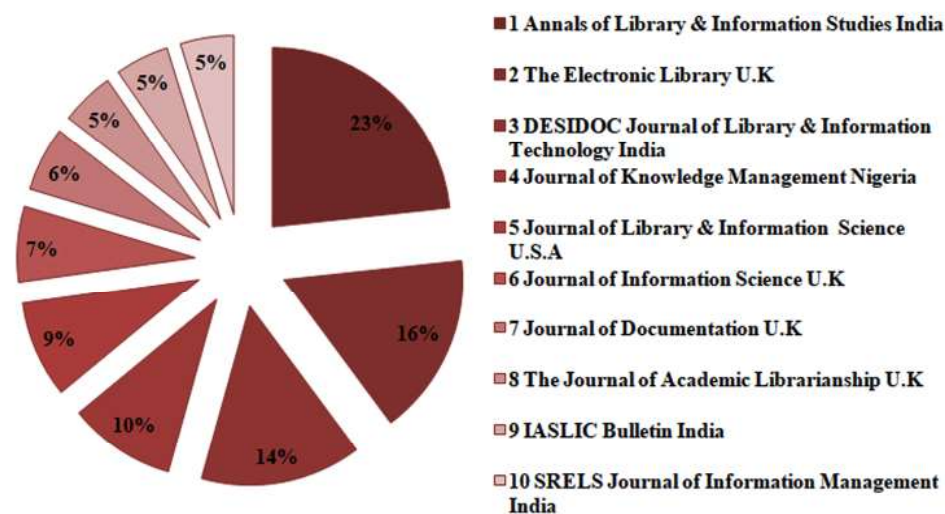
Fig. 2: Showing ranking of journals by frequency of citation

Table 4 and Fig. 2 show that Annals of Library and Information Studies is the most cited journal (23.3%) and is ranked first, followed by The Electronic Library (16.5%) and DESIDOC Library and Information Technology (14.5%). Journal of Knowledge Management (9.7%), Journal of Library and Information Science (8.7%), Journal of Information Science (6.8%), and others were also frequently cited. It is also clear that Indian journals are cited more frequently than foreign journals.

Table 5: Shows the distribution of cited documents by year

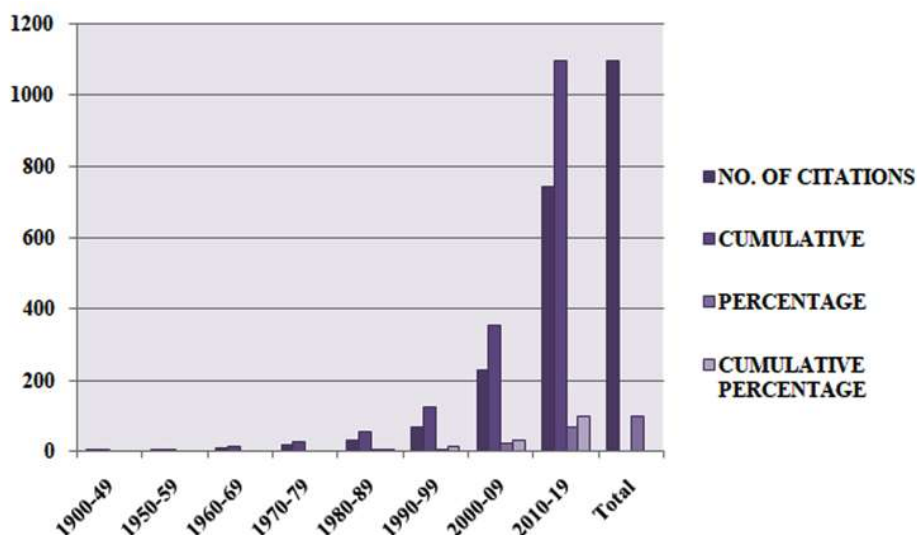| Year Citations	No. of citations	Cumulative	Percentage	Cumulative Percentage
1900-49	4	4	0.37	0.37
1950-59	2	6	0.18	0.54
1960-69	6	12	0.54	1.09
1970-79	15	27	1.36	2.46
1980-89	29	56	2.64	5.1
1990-99	69	125	6.29	11.4
2000-09	229	354	20.89	32.29
2010-19	742	1096	67.73	100
Total	**1096**	—	**100**	—

Fig. 3: Showing Year wise Distribution of citied Documents

According to the above table and figure, the most documents cited (67.73%) were published during the 2010-19 fiscal year, followed by documents published during the 2000-09 fiscal year (20.89%). The documents with the fewest citations (0.18%) were published between 1950 and 1959. Furthermore, out of a total of 1096 citations.

The findings of the study can be summarized as follows:

The following topics are covered in doctoral theses: I the digitization process in Indian libraries; ii) digital resource management; iii) the growth of research outputs; iv) the use of online resources; and v) the management and preservation of audio-visual materials. vi) Citation pattern of doctoral dissertations vii) Information seeking behaviour in digital environment viii) Growth & development of libraries ix) Role of state and district libraries x) LIS education. The majority of theses were submitted in 2020.

Among the three universities under consideration, the doctoral theses submitted to Bangalore University had the most journal citations (363). The most book citations are found in Bangalore University theses.[7] The thesis from Gulbarga University has the most e-resource citations. The least cited documents are those from Bangalore University's theses and reports.

The maximum cited documents in the 10 doctoral theses are the printed journals (79.8%) followed by Web based Citations (13.6%). The least cited documents are the dictionary followed by theses/ dissertations and reports.

Among the journals cited in the 10 doctoral theses, Annals of Library and Information Studies is ranked first with (23.3) citations, The electronic library is ranked second (16.5%), and DESIDOC Journal of Library and Information Technology is ranked third (14.5%). In addition, the study found that Indian journals were cited more frequently than foreign journals.

The greatest percentage of cited documents (67.73%) was published between 2010 and 2019. Only (0.18%) of the least cited documents were produced between 1950 and 1959. 6.9% of the documents were released between 1990 and 1999.

CONCLUSION

The findings show that the researchers from all four universities used various types of documents. The citation pattern of source documents in LIS as a whole indicates that journals have the most citations. This clearly demonstrates the importance of scholarly literature as well as researchers' reliance on journals for their research work. As a result of the study, it can be concluded that journals are the primary source of information for gaining access to a large volume of information in the field of LIS. It has also been discovered that research reports, theses/dissertations, and newsletters are the least used sources of information when compared to other sources of information. This could be due to a lack of knowledge about these sources.The journal ranking list depicts the most frequently cited journals by researchers. In addition, Indian journals are more frequently cited than foreign journals. E-resources are used far less frequently than printed documents. This study provides an overview of the research approach and citation behaviour, as well as information on the types of information sources sought for research studies in the field of Library and Information Science.

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Study on Knowledge Sharing and Job Satisfaction: A Systematic Review

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Abstract

The purpose of this study was to systematically collect and review the english language studies that provided empirical evidence for the existence of relationship between knowledge sharing (KS) and job satisfaction (JS) and their impact on each other.

Keywords: Relationship; Knowledge Sharing; Literature review; Job Satisfaction; Knowledge transfer; Systematic review.

INTRODUCTION

Knowledge becomes a source of competitive advantage when it is shared amongemployees (Sveiby, 2001).[58] Knowledges haring (KS) is a key element of knowledge management which plays a vital role in the learning and development of individuals workingin organizations by donating and collecting their information, experience and knowledge (Bock and Kim, 2002)[6] Lichtenthaler and Ernst, (2006).[16] KS occurs when a knowledge able worker supports his/her coworker by developing new capabilities and experience. The ultimate objective of KS is to transfer the knowledge of organizational resources and assetsamong the employees (Dawson, 2000)[14] providing organizations with asustainable competitive advantage in the highly competitive economy (Wang and Noe, 2010).[66] It is the key for managing tacit knowledge. Therefore, organizations should also encourage face-to-face communication and the creation of shared learning experiences, as well as build a K Sculture (Carpenter and 51 Rudge, 2003; Nonaka and Takeuchi, (1995)[47] Ståhle and Grönroos, 2000). KS activities include informal communication, brainstorming sessions, mentoring and coaching (Filius et al., 2000).[16]

KS involves two parties. One is called knowledge supplier and the other is knowledge demander (Javadpour and Samiei, (2017).[25] These are also known as knowledge source and knowledge receiver (Weggeman, 2000)[69] or knowledge carrier and knowledge requester Oldenkamp, (2001).[48] For KS, both the parties should be willing to send or receive knowledge. If one party is hesitant to share knowledge, the other will suffer and ultimately team, department and organization will suffer too. Thus, organizations should encourage their employe estoshareand receive new knowledge for

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over all development (Rehman et al., 2014).[50]

Empirical evidences revealed that there were a number of antecedents of KS behavior Ipe (2003)[22] categorized the min to fourmain groups, namely, the nature of knowledge, motivation to share, opportunity to share and the culture of the work environment.

For instance, explicit knowledge would be easier to share than implicit /tacit knowledge. Concerning the motivation to share knowledge, empirical studies have identified the factors stimulating KS which were enjoyment, helping others and self-efficacy (Lin, 2007).[35] However, motivation to share knowledge is subjected to the availability of opportunity to do so. Cabrera et al. (2006)[16] explored that information and communications technology in the form of electronic knowledge repositories were being used to facilitate KS. The culture of the work environment plays an important role such as communication climate and organizational justice affect KS (Kim and Lee, 2006)[29]

KS and job satisfaction (JS) are critical elements for employees that play an active role in attaining the organizational objectives at micro and macro level. Generally, JS is the attitude of individuals about their work (job). The concept of JS clearly aroused 75 years ago after the work done by Hop pock (1935).[19] Its importance can be analyzed from the findings of Granny et al. (1992) in which they stated that more than 5,000 studies had been published on this topic. Practitioners and academic iansbelieved that satisfied workers were more productive and dynamic as compared to dissatisfied ones (Sarker et al., 2003)[53]

A plethora of definitions was proposed by several researchers to identify multipleaspects of JS. This concept has received a considerable attention of various researchers in the fields of human resource management, business and psychology. This concept refers to positive or negative emotional state resulting from appraisal of an employee's job or work (Locke, 1976)[37] which comes from the evaluation of its characteristics (Hodson, 1991)[81] Mowday et al. (1982)[46] argued that it was the relative strength of identification and involvement of employees in a certain organization. Spector (1997)[55] argued that JS was partof an employee's personal attitude or trait which was influenced by managing and balance eingemployees 'work life experiences and challenges at their work place. In another detailed definition, JS has been explained as a concept that includes all characteristics of job and work environment that is rewarding, satisfying and fulfilling for employees (Rutherford et al., 2009)[51]

Employees seek information and knowledge to accomplish their tasks and remainresponsive for the completion of numerous routine needs. Bontis et al. (2011)[7] depicted that employees were more engaged and motivated with their job when they were more satisfied with their work. KS and JS have a connection with each other and, therefore, these have beendiscussed together in the literature (Jacobs and Roodt, 2007).[24] Over the decades, KS has connections with JS, and intra-organizational KS is the key knowledge management (KM) job satisfaction process, promoting JS for most employee groups (Braun and Avital, 2007). Several researchers have theorized the relationship between JS and KM in the previous literature (Saeed, 2016)[52] For instance, Teh and Sun (2012)[60] found that there was positive association between JS and KS behavior of employees. Some studies explored the Relationship between these variables with the mediating effect of organizational and/ or personal variables 5 (Becerra-Fernandez and Sab wal, 2014) such as de Vries et al. (2006)[15] confirmed that JS was associated with KS because of the mediating effect of willingness to share knowledge and enthusiasm. However, priorstudies have not provided adequate evidence of the association between JS and KS and their impact on each other (Hsu and Lin, 2008; Michailova 20 and Minbaeva, 2012).[41]

RESEARCH OBJECTIVE AND FOCUSED QUESTION

Enough literature is available that determines the nature of relationship between KS and JS (Rehman et al., 2014)[50] thus, there is a need to theoretically, systematically and empirically explore the literature determining the nature of relationship between these two factors (Almahamid et al., (2010)[2] The refore, the objective of the current study is to systematically collect and review the English languages tudies that provide empirical evidence for the existence of relationship between KS and JS.

The question the authors wish to address with this researchis:

Q1. What kind of relationship exists between KS and JS in studies that determined correlation nor causal relationship between these variables?

METHODS

Conducting a systematic review usually comprises upon the formulation of a focused research question, searching from different databases and retrieving the relevant studies, applying the

predefined inclusion and exclusion criteria to select the studies, quality evaluation and data extraction, presentation of results and analysis (Khan et al., 2011)[27] McKibbon, (2006)[38] Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) guidelines (Moher et al., 2015)[45] were followed in this study. These guidelineshelp reviewers to improve the reporting of systematic reviews and meta-analyses, to focusonr and omized trials and evaluations of interventions and to critically appraise published literature (Moher et al., 2009)[45]

SEARCH STRATEGY

A systematic search of literature was carried out using following search query limiting to title and abstract.

"knowledge sharing" AND "job satisfaction".

The literature was found from one specialized database LISTA (Library, Information Science and Technology Abstracts) using EBSCO platform; three general data bases i.e. Google Scholar, Scopus and Web of Science; and one dissertation database Pro Quest Dissertation and Theses using University Library portal in December 2016. The search wasupdated in March 2017. Literature was also found by manual searching from review articles and some key studies using backward and forward citation from Google Scholar.

INCLUSION AND EXCLUSION CRITERIA

Studies determining causal relationship or correlation between KS and JS were included in this review. No limit for year (time frame) of publication and type of study were applied. Therefore, journal articles, book chapters, conference papers, dissertations, reports etc. Were included. Furthermore, those studies that reported all types of respondents (professionals, employees, teachers etc.) were added. Further more, books were not included in this review because the authors felt that longer monographs might not be directly comparable to short monographs (journal articles, book chapters, conference papers, dissertations, reports, etc.) depending up on the assessment tools and various research methodologies.

STUDY SELECTION AND DATA EXTRACTION

The PRISMA diagram (Fig. 1) indicates the selection of eligible studies, the process of screening and reasons for exclusion. Screening at two stages, title /abstract and fulltext, resulted with 28 studies for inclusion in this review. A data extraction table was completed for each eligible study to collect information on the name of author (s), publication year, country, population, sample size and technique, type of KS and JS variables, scale used,other variables (dependent and independent) discussed and statistics calculated to determine the relationship between KS and JS.
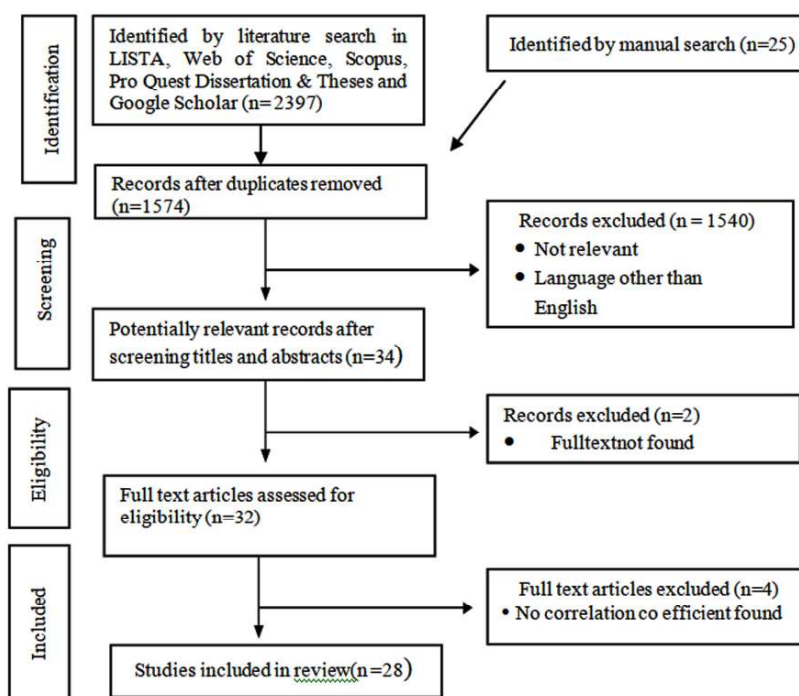

Fig. 1: Four phased flow diagram of studies'selection procedure

QUALITY APPRAISAL

It is essential to assess the quality of manuscripts used in systematic review to determine the risk of bias of studies. As Petticrew and Roberts (2008).[51]

Several quality assessment checklists (QACs) were used for this purpose and mostly were developed and published in health care literature (Khan et al., (2011).[27] The QACs can be modified according to the need of the study (Khan et al., 2011)[27] as most of the guidelines were developed in health care setting. The methodological quality of each included study in this review was independently assessed by the review ersusing "Quality Checklist for Questionnaire Survey" (Table 1) developed by Boynton and Greenhalgh (2004). This check list has been widely used in the systematic eviewing process to specifically evaluate the quality of surveys studies.

It was difficult to check the quality of included studies. Based on checklist of Boynton Greenhalgh, quality appraisal was performed from five perspectives, i.e. research question and design, sampling, instrument, response, coding and analysis and presentation of results. There are 13 questions in this scale; thus, the perfect score for a study evaluated would be 13 if it meets all the criteria (Table I). Instrument and response were the two categories of the checklist on which the studies scored lowest. Many authors failed to report the pilot version of the instrument and its modification accordingly, the number of participants lost to follow-up and the response rate of the receiving questionnaires. Scores of instrument might be low because most of the studies used pre-tested and validated instrument for data collection. Response section of the checklist lost the score because mostly studies did not mention the response rate of the respondents and not accounted for the non-responders.

Table 1: Quality assessment of studies

Studies	Research question and design score (Out of 2)	Sampling score (Out of 2)	Instrument score (Out of 4)	Response score	Coding and analysis score (Out of 2)	Presentation of results score (Out of 2)	Total score (Out of 13)
Kondaki et al (2017)	2	2	3	0	2	2	11
Hu and Zhao (2016)	1	2	3	0	2	2	10
Kianto et al (2016)	2	2	3	1	2	2	12
Tarigh and Nezhad (2016)	1	2	2	1	2	1	9
Thiptanamaneeand Usahawantchakit (2016)	2	2	3	0	2	2	11
Saeed (2016)	2	2	2	1	1	2	10
Lin (2015)	2	2	3	0	2	2	11
Trivellas et al (2015)	2	2	3	0	2	2	11
Kuo et al (2014)	2	2	3	1	2	2	12
Leung et al (2014)	2	2	2	1	2	2	11
Suliman and Al-Hosani (2014)	2	2	3	1	2	2	12
Reman et al (2014)	2	2	3	0	2	2	11
Wu et al. (2013)	2	2	3	0	1	2	10
Varshney and Damanhouri (2013)	1	2	4	1	2	2	12
Temitope (2013)	2	2	3	1	1	2	11
Misuraca (2013)	2	2	4	0	2	2	12
Master (2013)	2	1	3	0	2	2	10
Dawley and Munyon (2012)	2	2	2	1	2	2	11
Tehand Sun (2012)	2	2	3	1	2	2	12
Walker (2012)	2	2	4	1	2	2	13
Mogota eral (2011)	2	2	4	0	1	2	11
Balon et al (2011)	2	2	3	1	2	2	12

Table I: Continued..

Al-Hosani (2011)	2	2	3	1	2	2	12
Almahami et al (2010)	2	2	3	1	2	2	12
Mogotai (2009)	2	2	4	0	1	2	11
Jacobs and Rood: (2008)	2	2	4	0	2	2	12
Bewan and Avital (2007)	2	2	3	0	1	2	10
de Vries (2006)	2	2	3	0	1	2	10
Category Score (Quality Obtained)	53	56	86	14	49	55	312
Max Score by Catagory (Quality expected)	56	56	112	28	56	56	364

RESULTS

The literature was searched in five databases resulting in 1,574 studies. After an initialscanning of titles and abstracts, 34 studies were collected. Finally, 28 studies met the inclusion criteria depending upon the availability of full text and the existence of relationship between and/or impact of KS on JS and vice versa. The summary of the extracted data among selected studies is shown in Table II. The year of publications of the studies ranged from 2006 to 2017. Most of the studies were published in business and management science journals, but some were published in other disciplines' literature. Four studies were conducted in the USA; three studies in China; two each in Turkey, Malaysia, UAE, Botswana and Taiwan; and one each were published in Finland, Iran, Thailand, Libya, Central Greece, Saudi Arabia, Nigeria, Hong Kong, Jordan, South Africa and The Netherlands. The participants of 22 studies were the employees, team members or people working in various organizations. Of four studies, participants were teachers; while the respondents of remaining studies were nurses and library personnel. These participants belonged to a variety of public and private organizations such as automobile industry, oil and gas companies, finance and accounting firms, laboratories and stock exchange; while some participants belonged to educational and health-care institutions.

Table 2: Characteristics of studies and statistics calculated for correlation between KS and JS

Study	Country	Population	Sample size; Sampling technique	Type of KS variable	Aspect of KS covered	Type of JS variable
Kondaki et al (2017)	Turkey	Public primary and secondary school teachers	1649 from 327 schools; Two-stage cluster sampling	KS	Independent	Independent
Hu and Zhao (2016)	China	Employees and their supervises working for five companies	320, N/R	KS	Independent	Moderating
Kiato et al (2016)	Finland	Employees in a municipal organization located in south-eastern Finland	824, N/R	KS	Independent	Dependent
Tarigh and Nezhad (2016)	Iran	790 employees of 16 companies	286, Simple random sampling	Moderating	KS Behavior	Independent
Thiptanamanes and Usahawantchalt (2016)	Thailand	Employer 980 limited companies in the automobile industry	241, N/R	Independent	Interpersonal KS	Dependent
Saeed (2016)	Libya	Employees of Mellkah Oil Company MOC)	100, Convenience sampling	Independent	KS practices	Independent
Lin (2015)	China	Employees and supervisors of a work units enrolled as MBA students at a university in Shanghai	364 employees from 63 work units, N/R	Dependent	KS	Dependent

Table Cont....

Trivellata (2015)	Central Greece	Employees in accounting services firms (accounting offices)	84 employees, N/R	Independent	KS culture	Dependent
Kuo et al (2014)	Talwan	Engineers in Taiwan's electronic information industry	895, N/R	Moderating	KS	Independent
Leung et al (2014)	China	Local Chinese employees from 60 companies selected by MBA students university in Shanghai	716, N/R	Dependent	KS	Dependent
Suliman and Al-Hosani (2014)	UAB	975 employees of ADNOC group of six oil companies located in UAB	488, Simple random sampling	Dependent	KD,KC	Independent
Rehman et al (2014)	Malaysia	CIS faculty members of University Teknologi PETRONAS (UTP), Universal Teknology Mara (UTM), University Malaya (UM) and Multimedia University (MMU)	89, N/R	Dependent	Explicit KD, Explicit KC, Implick KD, Implict KC	Independent
Wu et al (2013)	Talwan	300 employees of financial industry	194,N/R	Dependent	KS intention, Attitude towards KS	Moderating
Varshney and Damanhouri (2013)	Saudi Arabia	260mployees of five mid-sized companies in Saudi Arabia	199,N/R	Independent	KS	Dependent
Temitope (2013)	Nigeria	507 Abrary personnel in academic and research libraries in south-west, Nigeria	187, Random sampling method	Independent	KS	Independent
Misuraca (2013)	The USA	325 active paid members of a professional Association of knowledge workers	44, Random sampling	Dependent	Tacit KS behavior	Independent
Master (2013)	California, USA	Independent professional trainers and corporate trainers at one California American Society Training and Development Chapter	44,N/R	Independent	KS	Dependent
Dawley and Manyon (2012)	USA, Canada	Employees at FORESIGHT laboratories	798 participants from 10 forensic laboratories, 9 in the United States and 1 in Canada, N/R	Dependent	KS	Independent
Teh and Sun (2012)	Malaysia	Information Systems Personnel working in three multinational companies in Malaysia	240, Stratified random sampling procedure	Dependent	KS behavior	Independent
Walker (2012)	Hong Kong	5000 CT practitioners includes technicians, supervisors, manager,CEOs/ Directors	228, Random sampling	Mediating	KS	Dependent
Mogotai et al. (2011)	Botswana	720 teachers in senior secondary schools	720,N/R	Dependent	KS behavior	Independent

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Bakan et al (2011)	Turkey	Employees in Municipality, Special Provincial Administration and Governorship of city of Kahramanmaras	356,N/R	Independent	KS behavior	Independent
Al-Hosani (2011)	Abu Dhabi, UAE	975 employees of ADNOC group of oil companies, UAE	488, Simple random sampling	Dependent	KD,KC	Independent
Almahamid et al (2010)	Jordan	Entire listed Manufacturing companies (91 companies) in Amman Stock Exchange	273,N/R	Independent	KS practices	Dependent
Mogotai (2009)	Botswana	720 teachers in senior secondary schools	283,N/R	Dependent	KS behavior	Independent
Jacobs and Rood: (2008)	South Africa	Registered professional nurses working in five private hospitals and four provincial (government) hospitals in three different regions (provinces)	530, Convenience sampling	Independent		Mediating
Braun and Avkal (2007)	Ohio, USA	3000 team members across 15 industries	327,N/R	Dependent	KS behavior	Dependent
de Vries (2006)	The Netherland	2,499 people from a variety of organizations	424,N/R	Dependent	KC,KD	Independent

Study	Independent	Other variable(s) discussed Mediating	Dependent	Scale used		Statistics calculated for correlation between KS and JS	
				KS	JS		
Kondaki et al (2017)	Trust climate, Process	N/R	Readiness for change (RPC)	Adopted	Adopted	Pearson's R = 0.38**	
Hu and Zhao (2016)	N/R	Creative self-efficacy	Employer's innovation	Adopted	Adopted	Pearson's R = 0.573**	
Kiarto et al (2016)	K acquisition, K creation, K codification, K retention,	N/R	N/R	Adopted	Adopted	Pearson's R = 0599**	β=0.439*** (ρ <0.005)
Tarigh and Nezhad (2016)	Work environment,	N/R	Services Innovation	Adopted	Adopted	Pearson's R = 056**	β=0.034 (ρ <0.1)
Thipman and Usahawankchakit (2016)	Learning orientation	Emotional intelligence	N/R	Adopted	Adopted	Pearson's R = 0.268**	
Saeed (2016)	N/R	N/R	Employee performance	Developed	Developed	Pearson's R = 0.688**	
Lin (2015)	Procedural justice climate	Affective tone (Positive, Negative)	Turnover intention	Adopted	Adopted	Pearson's R = 0.03**	
Trivellas et al (2015)	N/R	General competencies	N/R	Adopted	Adopted	Pearson's R = 0.410**	β=0.369* (ρ < 0.05)
Kuo et al (2014)	Workplace friendship	N/R	Adopted	Adopted	Service innovation	β=033*** (ρ<0.001)	
Leung et al. (2014)	Trust climate	Comparative distributive injustice	Expatriate evaluation, Intention to quit	Adopted	Adopted	Pearson's R = 0.47**	

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Suliman and Al-Hosani (2014)	N/R	N/R	N/R	Adopted	Adopted	Pearson's R (KD)= 0.20** (KC)=028**	β=0.20 (KD), 0.27 (KC)(ρ <0.01)
Rehman et al. (2014)	N/R	N/R	N/R	Adopted	Adopted	β=0.654 (ExKD),0723 (ExKC), (ImKC) (ρ<0.05)	0654 (Im KD)0856
Wu et al (2013)	Intrinsic and extrinsic motivation	N/R	N/R	Adopted	Adopted	β=-.22*** (ρ <0.01)	
Varshney and Damanhouri (2013)	Recognition (Self Supervisor)	N/R	N/R	Adopted	Adopted	Spearman's ρ=0.860**	β=0.870** (ρ<0.001)
Temitope (2013)	Work motivation	N/R	Oriented-comment	Adopted	Adopted	Pearson's R = 0.291**	
Misura (2013)	N/R	N/R	N/R	Adopted	Adopted	Pearson's R = 0.713**	β=0.71 (ρ <0.01)
Master (2013)	N/R	N/R	Self-efficacy	Adopted	Adopted	Pearson's R = 0.775**	
Dawley and Munyon (2012)	Embeddedness	N/R	Turnover intentions, Helping behavices	Developed	Adopted	Pearson's R = 0.21**	β=0.13 (ρ <0.05))
Teh and Sun (2012)	Job involvement, Organizational commitment	Organizational citizenship behaviour (OCB)			Adopted	Pearson's R = 0.383**	β=0.297** (ρ < 0.01)
Walder (2012)	Organizational culture	N/R	N/R	Adopted	Adopted	β = 0.429	
Mogotai et al (2011)	Organizational commitment	Organizational citizenship behaviour	N/R	Adopted	Adopted	β = 0.028 (ρ<)	
Bakan et al (2011)	Extrinsic motivation, KS intention	N/R	N/R	Adopted	Adopted	β = 0.34* (ρ<0.1)	
Al-Hosani (2011)	N/R	N/R	N/R	Adopted	Adopted	Pearson's R (=0.020** (KD) 028** (KC)	β=020 (KD,0.27 (KC) (ρ <0.01)
Almahamid et al (2010)	N/R	Employees' learning command-ments, Employees adaptability	N/R	Adopted	Adopted	Pearson's R = 0.413**	β = 0.293 (ρ < 0.05)
Mogotai (2009)	Organizational commitment	Organizational citizenship behavior	N/R	Adopted	Adopted	β = 0.030 (ρ < 0.05)	
Jacobs and Rood: (2008)	Organizational culture	Organizational commitment, Organizational citizenship behavior	Turnover intentions	Adopted	Adopted	Pearson's R = 0.549**	
Braun and Avital (2007)	Project manager practices	Team member social accountability	Individual learning. Individual team member	Adopted	Adopted	Pearson's R = 0.418	

Table Cont....

| de Vries (2006) | Team agreeableness, Team extraversion, Self-rated performance | KS attitude (willingness and ageless) | N/R | Adopted | Adopted | β = 0.27 (KC).0.29 (KD) |

Notes: K = knowledge, KS = knowledge sharing, KD knowledge donating, KC = knowledge collecting, JS job satisfaction, N/R = information not available reported, **= significant at 0.01

All the studies under review used survey questionnaire to determine the relationship between KS and JS. In most of the cases, items were adopted and/or modified for the measurement of both the variables using rating scales ranged from five to seven points. Simple random sampling technique was used to select the sample in six studies, convenience sampling in two studies and stratified and cluster sampling each in one study.

Along with other variables, 14 studies used KS as dependent, 11 studies as independent and three studies as mediating variable. Like wise, 14 studies dealt JS as independent, 12 as dependent and two as mediating variable accompanied by other variables. Depending up on the various aspects of KS variable, different types of KS such as KS behavior, KS attitude, KS practices, knowledge collecting, knowledge donating and KS intention were discussed in these studies.

CORRELATION BETWEEN KNOWLEDGE SHARING AND JOB SATISFACTION

Ten studies used the parametric Pearson's product-moment correlation coefficient (γ) to find the relationship between KS and JS. In eight studies, beta (β) regression coefficient value was calculated to see the impact of KS on JS and/or conversely. Both Pearson's coefficient correlation (γ) and beta (β) regression coefficient value were computed to measure the relationship and impact between two variables (KS and JS) in nine studies. Only one study used non parametric Spearman's rank correlateon coefficient (rho) and regression coefficient (beta, β) to find relationship.

The values of both Pearson and Spearman coefficients show the direction and strength of correlation between -1 and +1 where 1 is perfect positive linear correlation, 0 is no linear correlation and -1 is perfect negative linear correlation. Coefficient correlations are observed in 20 studies in which Pearson's coefficient correlation (γ) value was found in 19 studies ranging from 0.03 to 0.775, whereas Spearman's rho was computed in one study having value 0.860. Cohen (1988) proposed the most well known criteria ("rule-of-thumb")

to interpret the strength of correlation effect size (correlation coefficient) as 0.10 (small), 0.30 (medium) and 0.50 (large) correlation strength. But some other statistic iansopposed this criterion and suggested a larger value as a stronger effect, starting from 0.60 and sometimes from 0.80. The Cohen's criterion was used in this study for correlation effect size and it was found in eight studies that the value had exceeded the border of the large correlation strength group, seven studies fell in medium group while six studies in small group. Only one value shows that there is no correlation. The ρ-statistics calculated for these coefficients show that 18 relationships were found significant at $\rho < 0.01$, two at $\rho < 0.001$ while the remaining one was not significant.

The beta (β) regression coefficient was computed to make comparisons and to assess the strength of the relationship between each predictor variable to the criterion variable to see how strongly each predictor (independent) variable influenced the criterion (dependent) variable. The value of the beta (β) regression coefficient ranges from +1 to -1, i.e. if beta (β)value is positive, the relationship of predictor variable with the dependent variable is positive; if it is negative, the relationship is negative; and if it is equal to 0, there is no relationship between the variables.

In five studies, beta (β) regression coefficient values ranged from 0.293 to 0.870 where KS (predictor) influenced JS. The p-statistics value for these coefficients show that these relationships were found significant at $\rho < 0.1$, $\rho < 0.001$, $\rho < 0.05$ and $\rho < 0.005$ levels. Various aspects of KS such as KS behavior, attitude, practices and culture were studied along with its different types, i.e. explicit and tacit KS and knowledge donating and collecting. In these studies, other independent variables were also discussed, i.e. knowledge acquisition, knowledge creation, knowledge codification, knowledge retention, learning orientation and self and supervisor recognition.

In 11 studies, beta (β) coefficient value was found having the impact of JS (predictor) on KS with a range from 0.028 to 0.856 at $\rho < 0.1$, $\rho < 0.01$, $\rho < 0.05$ and $\rho < 0.001$ levels. Two dependent variables,

i.e. turnover intentions and helping behaviors, were also found in these studies. In one study, KS variable was dealt as mediating variable, and service innovation was the dependent variable in this study. All beta coefficient values were positive in the studies, and JS was found to be a strong predictor that influenced the KS.

DISCUSSION

It is the first study of its nature which has systematically collected and reviewed English language studies providing empirical evidence for the existence of relationship between KS and JS. The results based on 28 studies clearly reveal that these two variables have a significant positive relationship with and are influenced by each other. These studies came from various geographic locations and subjects and were conducted on different respondents.

Previous studies have proved positive association between JS and KS (Bontis et al.,)[7] 2011; Rehman et al., (2014)[50] Suliman and Al-Hosani, (2014)[57] Trivellas et al., 2015; Yunuset al., 2014). As Kianto et al. (2016)[28] and Saeed (2016) imply that higher the JS, higher will be employees' intention 68 identified that when employees were encouraged to share knowledge with each other, the ygotmoreop port unities to develop new ideas, explore in formation and contribute effectively in attaining organization's objectives. Consequently, the satisfied workers might cause the overall success of the organizations.

In most of the studies, JS was a strong predictor influencing the KS among the employees of variousorganizations, becau seen hancing the JS level of organizational members helps KS (Wu et al., 2013)[68] It will also be beneficial for promoting KS culture inoriginations, if employees give opportunities to participate in decision making and proper working environment (Jones, 2002)[26] Former research studies also revealed that JS was significant and positive related with KS intentions, so JS was higher and sharing intentions would also behigher 1(Al-Hosani, 2011; Bakan et al., (2011)[3] de Vries et al., 2006; Mogotsietal.,(2011)[43] Teh and Sun, 2012).

This finding has contributed to a greater understanding of the importance of JS of workers in organizations and has certain managerial implications. As the importance of JS is evident from the results obtained in this study, the responsibilities of managers and HR departments to create such a working environment suitable for KS

are extremely important[23] (Jacobs and Roodt, 2008). As JS directly and positively affects KS, therefore, if managers have desire to improve KS, they must enhance employees' satisfaction on their own work. Findings also suggest that top management needs to cultivate KS culture that will not only provide employees with greater JS but will ultimately increase the organizations' competitive advantage as Walder (2012)[65] asserts. The management can also expand the scope and effectiveness of industries by KS.

The findings of this study also depict that KS has influenced JS of the employees in organizations. The key finding is that the existence of KM processes such as KS, knowledge donating and knowledge collecting in the working environment are directly linked to high JS of the employees which are aligned to the finding of Kianto et al. (2016). KS is a core of KM that facilitates the employees to willingly share their knowledge with each other (King and Marks, 2008)[38] as well as, to exchange the relevant information with members across the organization (Bartol and Srivastava, (2002)[4] KS culture also enables employees to develop new general competencies or to sharpen existing ones, such as communicating, inventing new ideas, prioritizing, interpersonal relationships, planning, creativity, team working and problem solving. These values ultimately cause the JS of employees (Zhang et al., 2001).[71]

Collection and analysis of a large amount of evidence in this study may have implications for both theory and practice. KS (intrinsic or extrinsic) and self-recognition dimensions can be enhanced through creating a motivating and collaborative working environment. Varshney and Damanhouri (2013)[64] also identified that individuals felt satisfied in an open KS platform. Another implication of this effect is that managers should encourage their employees to implement KM activities such as sharing their personal information, experiences and tacit knowledge, both to improve knowledge workers' performance and their well-being at work.

CONCLUSION

This review has analyzed systematically collected studies that provided empirical evidence for the presence of relationship between KS and JS and their influence on each other. The findings clearly reveal that there was a strong positive association between KS and JS. Based on the results, it can be concluded that KS has a positive impact on JS and, on the contrary, JS has strong effect on KS among

the individuals working in different organizations. Inter-organization or intra-organization sharing of knowledge among employees may lead to an overall development of organizations and helps achieve the desired objectives. Organizations must provide their workers a sufficient environment for exchanging their ideas and personal skills which, in turn, might cause the satisfaction level of their workers. This study demonstrates different advantages of KM practices and JS for organizations, strengthening the argument that KM and JS are important drivers of value creation, organizational competitiveness, micro and macro collaboration and success[54] (Schiuma et al., 2012; Zack et al.;(2009).[70]

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(Dinesh Kumar Kashyap)

Open Access Scholarly E-Journals in DOAJ

Kaushal Chauhan

Abstract

Purpose of this study is to evaluate and provide a comprehensive view towards open access e-journals available in DOAJ. Directory of Open Access Journals is a service that provides access to quality controlled Open Access Journals. DOAJ is an effective source of information for the present day. This paper is an effort as a reference tool to guide for scholarly community, students, researchers, scholars about open access full text, quality controlled scientific and scholarly journals available in DOAJ in the disciplines of Medical Sciences, Basic Sciences, Technology, Social Sciences etc.

Keywords: E-Resources; E-Journals; Free E-Resources; Open Access E-Journals.

INTRODUCTION

The emergence of electronic resources has drastically revamped the status of all the libraries and information centers across the world during the last decade (Grogg, Jill E).[1] Open Access is an innovative way of providing unrestricted online access to articles published in scholarly journals. Open Access (OA) journals are freely available online. The Budapest Open Access Initiative (2002) defines that "By "open access" to this literature, we mean its' free availability on the public Internet, permitting any user to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any

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DIRECTORY OF OPEN ACCESS JOURNALS

DOAJ (Directory of open access Journals www. doaj.org) is a website that hosts a community-curated list of open access journals, maintained by

Infrastructure Services for Open Access. The idea for the DOAJ came out of discussions at the first Nordic Conference on Scholarly Communication in 2002. Lund University became the organization to set up and maintain the DOAJ. It was launched in 2003 with 300 open access journals. It is an online directory that provides high quality open access peer reviewed journals. All DOAJ Journals are free of cost including being indexed and it is not be limited to particular languages or subject areas. Open access journals from all countries and in all languages are accepted for indexing.There are now 17576 journals, 12256 Journals without APCs (Article Processing Charges) in the directory. 130 countries represented in 80 languages. As of today 7439766 articles are included in the DOAJ service. DOAJ is an independent, non-profit organization managed by Infrastructure Services for Open Access C.I.C. (IS4OA), a community interest company registered in the United Kingdom and with a branch in Denmark.

Objectives:

- To spread awareness about scholarly open access journals available in DOAJ

- To assess the subject category of journal in DOAJ

- To provide information about usage pattern of DOAJ for users

- To draw attention towards benefits of journals indexed in DOAJ

- To provide suggestions for vital usage of Scholarly Journals available in DOAJ

DOAJ Subject Converge

All scientific and scholarly subjects are covered. Today DOAJ is covering almost all areas of science, technology, medicine, social sciences, arts and humanities. Scientific and scholarly periodicals that publish research or review papers are found in full text and open access.

Use of DOAJ Database

DOAJ is librarians, publishers, researchers, students, journal owners and everyone. Impartiality plays a huge role in the progress that DOAJ has made over the last 5 years and the DOAJ Team works hard to ensure that impartiality is foremost in everything we do. This is one of the reasons that DOAJ adheres to, and encourages other to adhere to transparency, best practice and standards.

- *Signing up and logging in:* Only publishers and volunteers need to have an account; therefore, there is no need for normal users to log in to use the system.

- *Searching journals or articles in DOAJ:* The DOAJ search screen is highly functional, well organized and it provides the search results by sorting and filtering through various search options. Articles and journals can be searched using the various assigned categories. Publishers also often assign their own keywords as well. Articles are searchable by article author or title, ISSN, journal title, abstract, or key words. Full-text is not searchable but is fully accessible. Using logical keywords within the subject category will help you find what you need.

- *Classification and Categorization of Journals:* DOAJ uses the Library of Congress Classification system. DOAJ's editorial team classifies each journal and metadata, which then appears in the subject categories and sub-categories.

- *DOAJ License:* DOAJ has a strong preference for the use of Creative Commons Licenses, especially the least restrictive one: the Creative Commons CC-BY License (Attribution). DOAJ allows publishers to supply license information at the journal level. Licensing a journal with a Creative Commons (CC) License is an optimum way of showing exactly the type of attribution of journal in Open Access. Such licensing is very beneficial for authors as it reflects clearly limitations exist in creating the derivative works.

BENEFITS TO SCHOLARLY JOURNALS INDEXED IN DOAJ

DOAJ is the most important community-driven, open access service in the world and has a reputation for advocating best practices and standards in open access. By indexing your journal in DOAJ, its reputation and prominence will be enhanced. DOAJ metadata is free for anyone to collect and use, which means it is easily incorporated into search engines and discovery services. Indexing your journal in DOAJ is likely to increase traffic to your website and give greater exposure to your published content. DOAJ Database includes more open access journals from a diverse list of countries than any of the other major indexing services. Information about the journals is seen around the

world.

Suggestions

- The LIS professionals have to create more awareness of open accesse-journals available in DOAJ. Libraries webpage should provide links E-Journals available in DOAJ to its users and users should be informed regularly about these scholarly E-Journals.

- DOAJ indexes and promotes quality, peer-reviewed open access journals from around the world. We see open access as the only truly sustainable model for the future of scholarly publishing. DOAJ strives to achieve an equitable global transition to open access by raising the reputation and visibility of peer-reviewed open access journals from any country or discipline.

- In most of the developing countries especially like India where most of the research and academic institutions do not have adequate budget to subscribe to most of the journals in any field of knowledge, the visibility and accessibility of open access journals will certainly and potentially benefit the entire scholarly community.

CONCLUSION

DOAJ is an authoritative choice for the scholarly community in need of immediate access to peer-reviewed articles. The number of scholarly journals in DOAJ has been increasing over the years and taken momentum in countries like Brazil, UK, USA, Egypt, Spain, Indonesia, Poland, Germany, and India. There has been a rapid urge of the user community to get more and more Information Online. Academic libraries facing shrinking budgets and trying to acquire quality Information Resources in the most efficient and effective means possible. This coupled with the positive attitudes. Open Access E-Journals are available in DOAJ with accepted standards for users. DOAJ provide most high profile and heavily used Open Access E-Resources in the entire subjects.

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Best Practices in Academic Libraries: Special Reference to Govt. First Grade Colleges of Raichur District

Yallappa

Abstract

Quality Improvement without Best Practices and Accreditation can't be viable in today`s Academic Realm; Best practices are recognized through inspecting empirical proof of success. At gift there are numerous Best Practices observed in Academic Libraries to enhance the first rate of offerings and professionalism. This paper describes numerous meanings given through numerous dictionaries and council such Online Dictionary of Library and Information Centre and Information Science, Oxford Advanced Learners Dictionary, National Accreditation and Assessment Council after which discusses the Best Practices It additionally examine the Best Practices with their Goal of the Practice, The Process, Impact of the Practice, Resources required, and Remarks. This paper specializes in guidelines for Best practices in Library and Information Centre concerning NAAC.

Keywords: Academic Libraries; Best Practices; Library and Information Centre Services; NAAC; Quality.

INTRODUCTION

Accreditation activity is gaining traction in our country as people and educational institutions recognize the importance of quality enhancement for the institutions and the country. Libraries play an important role in the accreditation process. Library and Information Centre services have been expanding as they contribute significantly to the learning process, particularly e-learning. Accreditation is gaining traction in our country as people and educational institutions recognize the importance of quality enhancement for the institutions and the country. Libraries play an important role in the institutional accreditation process. Libraries' services have grown in importance as they contribute significantly to the learning process.

Though the NAAC does institutional accreditation, the assessment of a Library and Information Centre, a vital subunit, is a key step that integrates itself with the overall evaluation; the Library and Information Centre is the fulcrum of support for the entire range of academic activities on an educational campus. All of this emphasizes the importance of scientific Library and Information Centre evaluation in order to protect and enhance the Library and Information Centre's role as the

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focal point of academic development.

The collection, services, and outreaching capacity of the Library and Information Centre are all evaluated as part of the accreditation process.

Significant developments in Library and Information Centre and information services have been reported recently, and libraries are taking on newer responsibilities in higher education. Libraries played an important role in the learning, teaching, and research processes in institutions.

DEFINITION OF BEST PRACTICES

In simple terms, a 'Best Practice' is a practice that paves the way for improving existing functions and assisting in the effective implementation or use of a process.

ODLIS (Online Dictionary of Library and Information Science) defines best practices as follows: "In the application of theory to real life situations, procedures that, when properly applied, consistently yield superior results and are thus used as reference points in evaluating the effectiveness of alternative methods of accomplishing the same task." Best practices are identified by examining empirical evidence of success."

The Oxford Advanced Learners Dictionary defines best practices as "high quality, excellence, highly improved, outstanding, par excellence service." It refers to the usual or expected way of doing something in a particular organisation or situation, as well as guidelines for good practices. 'In this process of developing best practices, we take action rather than good ideas, and we improve our skills.' What is quality? It is customer satisfaction through a product or service. Students and teachers are the academic community's customers in an academic Library and Information Centre. When we look at the history of higher education in India, we can see that the Radhakrishnan (1948) and Kothari (1964) Commission Reports recognized the role of libraries in higher education.

They had recommended that colleges and universities have first rate libraries. Furthermore, the UGC Library and Information Centre Committee Report (1965), chaired by Dr. S.R. Ranganathan, provided a solid foundation for academic libraries. Since its inception in 1989, INFLIBNET has been providing financial assistance to academic libraries in order to automate Library and Information Centre operations. Today, INFLIBNET claims to have assisted more than 150 universities with Library automation. It is hoped that within a

decade, almost all universities will have Library automation.

On the recommendation of the National Policy of Education (NPE) in 1986, the National Accreditation and Assessment Council (NAAC) and Best Practices, University Grants Commission established a higher education body (whose job it is to assess the quality of universities and institution colleges) in Bangalore in 1994. This is the National Accreditation and Assessment Council (NAAC), which strives for quality and excellence in higher education and advocates for the role of libraries and information services in improving academic environments. According to the NAAC document "Best Practices in Academic Libraries," "best practices may be innovative and be a philosophy, policy, strategy, programme, process, or practise that solves a problem or creates new opportunities and has a positive impact on organizations.[1]

Academic libraries are part of larger academic organizations. Since the 1980s, the generation, organisation, and dissemination of information and knowledge have been in constant flux. Most academic libraries have Internet resources to supplement their print collection. These modifications are significant. The problem with us is that we accept most changes as normal. The internet saves time, repetition and redundancy, time lag and delays. We can quickly communicate with information service providers in the event of a problem, change, or addition to an existing collection or service. Library and Information Centre management must become more integrated through software. Librarians will need to research the capabilities of Library software because there are numerous features.

Quality in the context of a higher education institution is multidimensional. One such dimension is the operation of a Library and Information Centre. The need to improve the accuracy of the accreditation process is constant, and the opportunity to do so exists alongside it. The NAAC is always busy.

NATIONAL ASSESSMENT AND ACCREDI -TATION COUNCIL (NAAC)

The National Assessment and Accreditation Council is an autonomous body established by India's University Grants Commission (UGC) to assess and accredit higher education institutions in the country. It is the result of the recommendations of the National Policy on Education (1986), which placed a special emphasis on maintaining the

quality of higher education in India. To address quality issues, the National Policy on Education (1986) and the Plan of Action (POA-1992) advocated for the establishment of an independent national accreditation body. As a result, the NAAC was established in 1994, with its headquarters in Bangalore. NAAC's primary function is to evaluate and accredit higher education institutions and/or their units throughout the country.[2]

Fig. 1: National Assessment and Accreditation Council (NAAC)

According to the new methodology introduced by NAAC in April 2007, higher education institutions are assessed and accredited in two steps. The first step is for the institution to seek 'Institutional Eligibility for Quality Assessment (IEQA),' and the second step is for the institute to be assessed and accredited under the grades 'A,' 'B,' and 'C' for accredited institutions, and 'D' for those that are not accredited.[3]

NAAC has identified seven criteria:

1. Curricular aspects

2. Governance and leadership

3. Infrastructure and learning resources

4. Innovative practices as the basis for its assessment procedure

5. Research, Consultancy and extension

6. Student support and progression

7. Teaching learning and evaluation

Need For Best Practices

Libraries are in the service business so it has to ensure quality in service. The most important product they have is service. Without service, libraries are indistinguishable from museums or they are a combination of a maze and morgue for books. Service is a pervasive ethic of the profession of librarianship. (Gorman, 1999)

College libraries must provide facilities that promote effective and interactive access to and use of information resources for all users. In terms of physical facilities, libraries must provide a safe, comfortable, well lit, clean environment with adequate and appropriate seating arrangements to

ensure effective use of the Library and Information Centre's resources, including digital resources. College libraries are required to consider study space needs when allocating seating space, with special attention paid to reserve collection. To provide better services to users, libraries must develop well-defined rules and guidelines regarding access hours, circulation policies, and other regulations.

Best Practices for Academic Libraries

While assessing the quality of higher education in the country, NAAC has provided useful guidelines to improve the overall quality of Library and Information Centre and the services provided by these centres. To effectively meet the challenges posed by global technological changes and to meet the multidimensional information needs of Library and Information Centre end users, NAAC has developed a set of forty eight best practices for libraries and information centres. NAAC collected data on best practices from libraries across the country in a specific format4. The best practices are proudly divided into four categories:

1. Management and Administration of Library and Information Centre.

2. Collection and Services.

3. Extent of User Services.

4. Use of Technology.

The best practices suggested by the NAAC in its quality indicators in Library and Information services to the constituent colleges listed below.

1. Automation of Library and Information Centre with Integrated Library software.

2. Inclusion of sufficient information about the Library and information in the college website and prospectus.

3. Compiling students/teachers attendance statistics and locating the same on the notice board.

4. Displaying/filing newspaper clippings on the notice board periodically.

5. Display of Career/Employment Information on the notice board regularly.

6. Internet Facilities to all the user groups.

7. Information literacy programs.

8. Suggestion box and timely response.

9. Displaying new arrivals and circulating a list of those to academic departments.

10. Conducting book exhibitions on different occasions.

11. Organizing book talks.

12. Instituting Annual Best User award for students.

13. Organizing competitions annually.

14. Conducting user surveys periodically.

Best Practices for Libraries

Predetermined weightage of 20 marks out of total 1000 are given to the Library and Information Centre under the Criterion IV named as Infrastructure and Learning Resources. Those institutes and colleges are preparing for NAAC accreditation; they can follow some suggestions to get good marks. They should provide best services to users as mentioned below.

Best User Award

Library and Information Centre should be organized annually seminar/workshop/conference and Awarded "Best User" For Regular Visitor of Library and Information Centre.

Newspaper Clippings

Library and Information Centre should maintain clipping files on different subject of students Interest and as per Institute demand. Some informative news clips stick on notice board also. Librarians should maintain Notice File which contains one copy of every notice in this file. Current Awareness Service (CAS) service provide to users by email and notice board. Library and Information Centre should displays different websites information on notice board.

Previous Year Question Papers

All subjects question papers of previous year should be arranged in file. Scanned question papers should keep in digital Library for users. Besides its eBooks, Syllabus, E-resources are the part of Digital Library.

Suggestion Box/Register

Suggestion box should be in the Library and Information Centre for valuable suggestions of users or keep suggestion register in the Library and Information Centre and put before the Library committee to resolve the user's problems.

Institutional Library and Information Centre Membership

Librarian should be member of Delnet, National

Digital Library, Inflibnet, British Council Library, American Library and other institutional Library and Information Centre membership.

Budget

Library and Information Centre department proposed annual budget for the year. There should be a proportionate growth in the Library budget. Budget for different documents such as books, journals and other resources and ICT infrastructure are to be defined as to the scope of the institute.

Sources of income other than state, central and UGC grants may be identified for enhancing the collection and services. In Library and Information Centre, last five year's budget file should be in the Library and Information Centre.

Book Exhibition

Librarian should organized book exhibition in the institute for books selection. Faculty members and students visit in the exhibition and aware about new titles of books.

Fig. 2: Book Exhibition

Digital Library and Information Centre

A digital Library and Information Centre is a collection of documents in organized electronic form, available on the Internet or on CD-ROM disks. Depending on the specific Library and Information Centre, a user may be able to access e-resources, magazine articles, e-books, papers, audio, and videos. In digital Library and Information Centre should have minimum 10 computers for users? Report of e-resource users should be arranged in year wise.

ILL & MOU

Library and Information Centre department should has memorandum of understand (MOU) with other organizations to share reading materials and E-resources. Library and Information Centre becomes member of Delnet, it provides Inter Library and Information Centre Loan (ILL) facility to users.

Career Information Services

Library and Information Centre should provide career information service to students, keep separate section of this service and keep job related reading material in this section.

Library and Information Centre Advisory Committee

The formation of the Library and Information Centre committee with an equal representation by faculty and students, and the role of the committee and its functions in developing the Library and Information Centre services are to be well defined. The Library and Information Centre Committee works for the strategic development of the Library and Information Centre Committee convene meeting twice per year and additional meeting, if required and record the minutes of meeting for the same.

Library and Information Centre committee is constituted with the following members:

- Senior most Faculty   Head
- Dean   Member
- All Head of Department (HoDs)   Member
- Faculty In-charge   Member
- Librarian   Member Secretary

Library and Information Centre Policies

The Library and Information Centre should have approved policies on the collection development support, Books issuance, introduction of new services, support in terms of fund, annual budget, book bank, binding procedure, weed out books, and policy on loss of books and an ongoing commitment of the institution in deputing Library and Information Centre professionals for continuing and further education.[5]

NAAC strives for Quality and excellence in higher education and advocates for enhancing the role of Library and Information Centre and Information Services in improving academic environment. Document prepared by NAAC for Best Practices in Academic Libraries says "Best Practices may be innovative and be a philosophy, policy, and Strategy program, Process or Practice that solves a problem or create new opportunities and positively impact on organizations." NAAC developed a set of Best Practices followed in academic Libraries and presented under the following four broad areas:

- Management of Library and Information Services
- Collection and Services Provided to Users
- Extent of the Use of Services
- Use of Technology

NAAC Peer Team Members Can Ask

1. Are the qualifications, experience and pay of the Librarian as per government/UGC norms?

2. Does the Library and Information Centre have extended and appropriate working hours before/after the class hours?

3. Does the college have a Library and Information Centre Advisory Committee? If yes, what is the role of the Library committee?

4. Does the Library and Information Centre function on Saturdays, Sundays and holidays to facilitate use by students and faculty members?

5. Has the librarian attended/participated in orientation/refresher courses and workshops/seminars/conference?

6. Does the Library and Information Centre have separate premises of its own? Does it contain minimum infrastructure facilities such as utilities, staff area, reading hall, periodicals section, circulation counter, service area, Information Display, etc.?

Fig. 3: NAAC Peer Team members asked questions to Librarian

7. What is the ratio of the seating capacity to the users (students and faculty members)?

8. Is the Generator facility extended to the Library and Information Centre?

9. What are the measures for overall maintenance and cleanliness of the Library and Information Centre?

10. Does the Library and Information Centre have computers and Internet facilities?

11. Are the Library and Information Centre functions automated? If yes, are they fully/partially automated?

12. What are the financial/funding sources other than the state, central and UGC grants?

13. Is there any defined policy for collection development, stock verification, promotion and training of Library and Information Centre staff?

14. How many International, National, Peer Reviewed Journals?

15. Journals subscription details and list of e-journals.

16. DELNET Membership, Inter Library and Information Centre Loan (ILL) facility

17. How many Magazine and Newspapers?

18. How many Volume and title?

19. Which Library software used and Bar coding on books?

20. Which secret page of books?

21. Which type Reference books in Reference section?

22. How many Encyclopedias and Dictionaries?

23. How many Foreign Authors books?

24. How many books purchase in this year (with Bills)

25. Audio-Video Materials (Non Book Materials)

26. How many Handbooks and Reports?

27. Book issuance report of Students

28. Stock verification report and missing books list.

29. Reprography services (Photocopy facility to users)

Best Services for Academic College Libraries

The Library and Information Centre has a key role in supporting the academic activities of the institutions by establishing, maintaining and promoting Library information services, both quantitatively and qualitatively. The Library and Information Centre offers a wide range of services from reference to electronic information services. College libraries may answer the following basic questions for ensuring appropriate services to the academic community. Performance evaluation of college libraries needs to be carried out at regular intervals in order to sustain and enhance their quality. Normally, the evaluation can be made on compilation of use statistics.

Now a day's ICT plays a very important role in Library and Information Centre. Number of books, Journals are available in the form of CD's, DVDs, E-books, E-journals, E-Resources and online databases etc. also the libraries & there Bibliographical Databases available Online.

Accreditation criteria need to introduce IT in Libraries, and also colleges are highly involved in research activity so they need recent information, online journals, Internet facility etc., After evaluation it is found that the college libraries in Rural area are introduced IT in their Libraries, also the colleges of science faculty are mostly used the IT services in there libraries.[6]

Listed below are some of the best practices that can enhance the academic information environment and usability.

• Computerization of Library and Information Centre with standard digital software.

• Conducting book exhibitions on different occasions.

• Compiling student/teacher attendance statistics and locating the same on the notice board

• Inclusion of sufficient information about the Library and Information Centre in the college prospectus.

• Displaying new arrivals and circulating a list of those to academic departments.

• Displaying newspaper clippings on the notice board periodically.

• Career/Employment Information / Services

• Internet Facilities to different user groups.

• Information literacy programs.

• Suggestion box and timely response.

• Organizing book talks.

• Instituting Annual Best User award for students.

- Organizing competitions annually.

- Conducting user surveys periodically.

Suggestions

- Make Library and Information Centre PPT which has contains last five years data of Library and Information Centre, i.e., footfall of users, Users statistics, books, journals, Newspapers, magazines procured.

- Collection of previous year's Question Papers for last 5 Years and provided to students on demands

- Extra Library card issue to Topper Students

- Book Bank facility to students

- News Paper clipping file should be arrange year wise.

- Suggestion Box or Suggestion register should be in the Library and Information Centre For valuable suggestions.

- ICT-Enabled Services – Digital Library Services

- Resource Development & Management

- Library and Information Centre should be neat and clean.

- Print journal's scanned contents should be sent via email to regarding faculty members, if they required full article then visit in the Library and Information Centre.

- Students and faculty member's Library and Information Centre entry records in the Register last 5 years.

- E-Resources usage statistics of users.

- Indoor plants should be in the Library and Information Centre for green environment.

- Stock verification records file.

- New Arrivals are displayed in separate section

- Book Exhibition/Workshop/Conference organize every year by Library and Information Centre department.

- Best User Services to users by Library and Information Centre staff.

- Dr S.R Ranganathan (Father of Library and Information Science) Jayanti Celebration every year and Dr S.R Ranganathan's photo should be in the Library and Information Centre.

- Best User Award given to the users.

- Special care of Physically Disabled persons to search reading material.

- Give all questions reply positively with smile.

It is suggested to NAAC that the best practices followed in British Libraries and American Center Libraries operating in India should have been taken into account. There are areas which we have not been able to find out as best practices. A few examples of such areas are: index to periodicals, real time reference service, preparation of various statistics of the use of e-resources and many other areas.

CONCLUSION

The best practices are help for improving quality of library services. The best practices adopted in academic institutes should bridge the gap between library collection & user community for maximum utilization of the resources. Library adopted various best practices in its administration, management, collection & services, extent of the use of services and use of technology. The technology based services are essential for providing up-to-date information to user community. In its effective implementation that make significant change in enhancing the use of information sources/services and users satisfaction level.

The above best practices by every academic institution library creates its own image in the mind of students, faculty & society. The nature of the students to look library professional is a knowledge manager.

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Impact of Electronic Books in Academic Libraries of Bellari District: A Study

Yamanurappa

Abstract

In this study aims to explore the developments of impact of e-books in academic libraries of Bellari district. A survey was conducted to collect primary data from respondents through a structured questionnaire. The questionnaire contains both types of questions as closed-ended and open-ended. It was personally distributed to 100 Under Graduate students and the 71 answered questionnaires received back. It is found that respondents are using e-books for learning, preparing the assignments and update subject knowledge. It is also viewed that students are facing difficulty in access to e-books a limited number of computers and a lack of training, etc. The common benefits of e-resources are easy to search, up-to-date, easy to share and link to other resources.

Keywords: e-books; current trends; Impact; Collection Development.

INTRODUCTION

As a greater number of electronic resources become available, retrievingre[1] evant and author itative in formation has become progressively more challenging and time consuming. Locating relevant information in a timely manner is critical for both the researcher and the information professional. Electronic Books (e-Books) are one way to enhance the digital library with global 24/7 in a day access to authoritative information, and they enable users to quickly retrieve and access specific research material easily, quickly, and effectively. It is crucial to not only provide these electronic resources, but to integrate them in to library systems to stream line library operations, as well as promote user adoption. As an e-Book provider, net Library, a division of Online Computer Library Centre (OCLC), has been involved in these lection cataloguing, and distribution of e-Books. Library users are able to remotely search, locate, and check out e-Books from the libraries online public access catalogs (OPACs). As with any new opportunity, new challenges emerge and utilizing the internet to deliver book content is no exception. Integrating e-Books in to the digital library has created challenges and opportunities for librarians, publishers, and e-Books providers.

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DEFINITION

An e-Book is based both on emulating the basic character is tics of traditional 1 books in an electronic format, as well as lever aging internet technology to make an e-Book easy and efficient to use. An e-Book can take the form of a single monograph or/a multi-volumes e to of books in a digital format that allows for viewing on various types of monitors, devices, and personal computers. It should allows arching for specific information across a collection of books and within a book. An e-Book should utilize the benefits of the internet by providing the ability to embed multimedia data, to link to other electronic resources, and to cross reference information across multiple resources.

REVIEW OF RELATED LITERATURE

An information resource is a backbone of academics, research, and development. The information and communication technology tools have changed the mode of communication and availability of information in a digital environment (Bellary and Kashinath Surve, 2019). There is no doubt that e-resources are contributing a lot towards research, development, and higher education. These resources have converted into knowledge disseminating center. These resources are being accessed by the user community at a very fast pace (Kumar, Palaniappan, and Duraisekar, 2018). Bhat, N. (2019), investigates that the respondents believe that due to the advent of e-resources the users' interest in studies has enhanced and the e-resources have also played a significant role in the timely completion/submission of their study related assignments. He further found that a good proportion of respondents agree that the advent of e-resources has laid a positive impact on the performance of users in academic examinations, competitive examinations, and the interviews they face.[2]

Alphonce, S. and Mwantimwa, K. (2019), the results show that there is not any time restriction to use e-resources due to which they become more useful. On the other hand, students face some barriers as the cost of internet services, limited search capacity, and limited access.[1] Saxena, S. (2018), underlines five factors (institutional; the task complexity; relevance and application; information quality; and technical) that are responsible for limiting the usage of academic journal articles by universities, teachers, and students.[7] Isibika, I. and Kavishe, G. (2018), point out that participants had little knowledge about subscribed e-resources, and the major barriers that led to underutilization were unstable network connectivity and a lack of search skills.[4] Bhat, N. (2018), finds that users have a great propensity to use e-resources as most of them have seen to use them daily or twice or thrice in a week.[3] Kumar, Vand Batra, D. K. (2018), reveal that students are well aware of e-resources and consider them as more useful for their academic performance. They also observe that students are using open-access resources more than subscribed e-resources due to a lack of search skills. Further, faculty awareness programs and training have come out as motivation factors that have convinced students to use e-resources.[5] Lwoga, E. and Sife, A. (2018), found that better educated and middle aged faculty members with a wide experience of using e-resources are more likely to continue using e-resources. They investigated that information quality had a positive relationship with the continuous use of e-resources while an indirect impact on service quality.[6] Tetteh, E. (2018), the results show an improved usage of Carligh facilitated electronic resources. However, the rate of improvement declined by the year. The frequency of use of e-resources varied in different months of the year. Lwoga, ET.[11] and Sukums, F. (2018), studied that in addition to the Google search engine, Wikipedia, and four scholarly databases, the awareness level of respondents about the other 19 scholarly databases and search engines were below 50 percent.[6]

ELECTRONIC BOOKS (E-BOOKS)

An electronic book is defined as a resource which involves computer or ICT to access, storage and delivery information. The E-book circulate information in different forms and media such as CD-ROM, Floppy Disk or Magnetic tape or online networks like online databases, information gateways, institutional repository, websites, etc. The book trade literature from a few years ago included industry analyst's predictions that e-Books would in short order make significant inroads in to the market for paper books (p-Books). P-Books would be displaced by e-Books because of the e-Book's ready availability at any time and place where there was an internet connected computer. Consumers would be able to have what they wanted when they wanted it. This situation is the usual prescription for a change in items consumed in an increasingly fast paced world. Had this article being written in early 2001, rather than early 2002, there might still be some evidence that this trend was advancing. However, recent events in the e-Book market place

strongly indicate that the time has not arrived yet for areadermig ration to electronic content this has occurred for several reasons. Before these reasons are discussed, the advantage of e-Books should be presented.

ADVANTAGE OF E-BOOKS

Text can be search edau tomatically, and cross-referenced using hyperlinks. This makes e-Books an excellent choice of format for works that benefit from search and cross-reference capabilities, such as dictionaries, reference works, and certain kinds of text books.

Less physical space is required to store e-Books. Hundreds or thousands maybe carried together on one device. Approximately 500 average e-Books can be stored on one CD (equivalent to several shelves worth of print books). Because they take up little space, e-Books can be offered in definitely, with no' out of print' date, allowing authors to continue to earn royalties indefinitely (copyright law permitting), and allowing readers to find older works by favorite authors.

Readers who have difficulty reading conventional books can benefit from the adjustment of text size and font face. Text-to-speech Software can be used to automatically convert e-Books to spoken books. In addition e-Books may be read in low light or even total darkness, with a back-lit device.

It costs nothing to replicate e-Books. Copies can be made instantly and in as great a quantity as desired. This makes it easy to retain backups, and means that it is difficult to eliminate works once they have been distributed. E-Books can be published by independent publishing houses, which can mean greater editorial and authorial freedom and more room or experimentation. From the publisher's point of view, the case of distributing e-Books means that they can be used to stimulate higher sales of printed copies of books.

With Internet access becoming ubiquitous in industrial nations, the case of distribution e-Books is a considerable advantage. e-Books cost nothing to transfer, and such an operation occurs instantly. Readers can begin reading at once, without the need to visit a book store. Errors in texts may be. Easily and quickly corrected, and may even be pushed to users to update their copies of works in-place, rather than requiring a separate erratum. No environmental resources are consumed by e-Book replication, cutting do wnon paper and ink production. Nor do e-Books require to be replaced

through wear and tear; there is no risk of damage, vandalism or duration on the pages.

OPPORTUNITIES

The Internet has caused an evolution in the book publishing industry with the emergence of the e-Book. The advantages of e-Books for libraries are straight forward and include:

- Easy access to content.
- On-demand availability
- Prevention from being lost, stolen, or damaged
- Capability to search within a book and across a collection of books
- Ability to be linked toot her resources, including dictionaries and the sauri
- Absence of physical space requirements
- Device in dependence for accessing the content
- Access to content using standard web browsers
- Customizable search interfaces
- Easy transportation and
- Access from anywhere.

e-Books create new opportunities for publishers and have revived the scholarly monograph. They also provide an opportunity for publishers to maintain a competitive position in the market place. The emergence of thee-Book has given publishers new ways to serve customers by re-purposing content and creating living books, which incorporate text, audio, video, and other resources, such as dictionaries, thesauri, etc.

E- BOOK CHALLENGES

(a) For Librarians

The integration of e-Books in to the digital library has not only created opportunities for librarians, but also created several challenges. Full-text access and retrieval of e-Books combine library-based theories and principles with web search and retrieval techniques. Librarians must develop innovative policies, procedures, and technologies to accommodate the publication of and access to e-Books. e-Book challenges for librarians can be grouped in to three categories:

(i) Acquisition and collection development

(ii) Standards and technology

(iii) Access.

Within each of these categories are subcategories. Acquisition and collection development challenges include budget allocations; usage and distribution models; purchase models; and collection development strategies. Standards and technology challenges include not only cataloging and met a data standards and schemes, but also e-Book hardware and software technologies, digital rights management software, and user and staff training. Access challenges include the cataloguing and indexing of e-Books, circulation models for the electronic environment and preservation and archiving of e-Books and there sources linked to them.

FOR PUBLISHERS

Since the Internet knows no boundaries, publishers must also contend with challenges created by the emergence of the e- Book. These include securing both electronic and territorial contractual rights for content and permission clearance. Publishers must become involved in the development of format identifiers, such as International Standard Book Numbers (ISBNs), Digital Object Identifiers (DOI), International Standard Text Code (ISTC), and Online Information Exchange (ONIX). "ONIX" refers to a standard format that publishers can use to distribute electronic information about their books to wholesale, e-tail and retail booksellers, other publishers, and anyone else involved in the sale of books. e-book meta data creation and distribution, as well as e-Book file delivery are new publisher venues that require additional resources. Editorial and production workload, quality assurance, and sales reporting and accounting, including royalties for electronic content, require publishers to revive policies and procedures, to hire personnel with these knowledge and skills, and to trainperson nnel in this new publishing venue. Publishers must also develop methods for the storage and transmission of e-Book files for purposing content. The marketing for and the publicity and sales integration of e-Books also require publishers to revise content practices or to develop new practices.

In spite of these challenges, progress has been made in the production and distribution of e-Books during the last two years. Librarians, publishers, e-Book providers, and integrated library system vendors have worked together to implement and integrate cquisitions systems; test various collection development strategies; propose and adopt new,

revised, and combined standards; provide new e-Book hard ware and software; identify and test new indexing and retrieval methods for full-text e-Books; test new access and usage models; and initiate archiving policies and procedures for e-Books. Several models have emerged for providing, distributing, accessing, and retrieving eBooks.

CONCLUSION

This study finds that students of Academic Libraries of Bellari District well aware of e-resources. Websites, mobile apps, video contents, and e-books are the most frequently used e-resources to access information. More than 50% of students used e-resources for update subject knowledge, academic and self-learning activities. e-resources get the upper hand with their features as quickly accessible, easy to search, up-to-date, easy to share and link to other resources. The common difficulties faced in using e-resources by respondents are lack of training, slow download speed, a limited number of available title and limited access to computers. It is found that most of the respondents are unanimously agreed that e-resources are requisite for efficient and effective learning.

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Use and Impact of E-Resources in Academic Libraries: Special References in Government First Grade Colleges of Kolar District

Padma. R

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Abstract

The advent of information technology has had a significant and pervasive impact on almost all areas of library services. The library environment has changed rapidly, resulting in a new generation of libraries focused on electronic resources. As the popularity of electronic resources increases, librarians and staff are also concerned about electronic resources, their methods, access, evaluation, selection, organization, etc. In this study, the existing situation of electronic resources in some academic libraries in first class state colleges of Kolar district has been revealed. The study also shows the advantages of using electronic resources, the problems faced by users in accessing electronic resources, and the perceived impact of electronic resources on academic library users. Today, electronic resources have transformed the entire library systems and services. Whereas a decade ago most online information searches took place in libraries and information centers and were primarily related to scientific and technical bibliographic databases, today they are much more common in the workplace and at home, and literally anyone can sit down at a computer.

Keywords: Use of e-resources; Impact of electronic sources; Academic libraries; Kolar.

INTRODUCTION

The invention of computers and the Internet has radically changed the way information is collected, stored, organised, accessed, and

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consumed. Today, the availability of electronic resources in a university library is widespread, but their appropriate and maximum use is a point of debate. Electronic resources have transformed traditional library systems by making them accessible by anyone, anytime, anywhere. Since electronic resources provide more up-to-date information and the user is not tied to a specific location, they have a great impact on students, faculty, and researchers who use the library for their studies or research. *Crawford , John C. and Daye, Andrew. (2000)* the advent of information technology has resulted in reducing the size of libraries. In fact, these smaller modern libraries are rich potential of information. It has been possible due to the digitization of information. The digital

and electronic information is based on electronic data, which has gradually replaced paper-based records. As the visual information system in comparison to text based information system is getting more and more popular these days, the traditional libraries are becoming hybrid libraries as they are in the process of doing digitization of their documents and moving towards to become electronic libraries.[1]

An electronic resource is defined as a resource which require computer access or any electronic product that delivers a collection of data, be it text referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD ROM, on tape, via internet and so on. *Edwards, C.E.: Day J.M. and Walton, G. (1995).* a numbers of techniques and related standards have been developed which allow documents to be created and distributed in electronic form. Hence to cope with the present situation, librarians are shifting towards new media, namely electronic resources for their collection developments that the documents of users are better fulfilled. The e-resources on magnetic and optical media have a vast impact on the collections of University libraries. These are more useful due to inherent capabilities for manipulation and searching, providing information access is cheaper to acquiring information resources, savings in storage and maintenance etc. and sometimes the electronic form is the only alternative.[3]

E-resources (electronic resource) is that, "Information (usually a file) which can be stored in the form Electrical signal usually, but not necessary on a computer.

Types of e-resources: The e-resources are basically divided in two major types are:

Online e-resources, which may include:

- E-journal (Full text & bibliographic)
- E-books
- Online databases
- Web sites

Other electronic resources may include:
- CD ROM
- Diskettes
- Other portable computer databases

OBJECTIVE OF THE STUDY

The main objective of the study is to evaluate the use and impact of electronic resources on academic libraries. The other objectives of the study are to:

- Study the impact of electronic resources on the academic works of users.
- Know the different types of electronic resources available in the selected libraries.
- Study the purpose and frequency of using the electronic resources available in the libraries.
- Identify the impediments faced by the users while accessing and using e-resources.
- Assess the benefits of e-resources over conventional sources of information.

SCOPE OF THE STUDY

This study has been conducted on nine selected Government First Grade College libraries around Kolar District. These are:

Table 1: Scope of the Study

Sl. No	Name of the College Library	Type	Year of Establishment	Location
1	Government First Grade College	Public	1948	Kolar
2	Government Women's College	Public	1984	Kolar
3	Government Law College	Public	1996	Kolar
4	Government First Grade College	Public	1985	Srinivasapur
5	Government First Grade College	Public	1988	Malur
6	Government First Grade College	Public	1970	Mulabagilu
7	Government First Grade College	Public	1985	Bangarapet
8	Government First Grade College	Public	2007	KGF
9	Government First Grade College	Public	2007	Bangaru Tirupathi

METHODOLOGY

Methodology used for this study was based on qualitative methods, which include questionnaire surveys on the users (i.e., students and teachers) of the selected Academic College libraries. The questionnaire was close ended. Data for this research came from both primary and secondary sources. The primary data was collected from the users of the selected libraries through the questionnaire. The secondary sources of data included previous works such as thesis, reports, books, journals and other electronic sources. The goal was to receive qualifying surveys from the users in order to provide a clear concept on use and impact of electronic resources on academic libraries.

For collecting data, a number of total 200 questionnaire was distributed among the users of the selected College libraries (i.e., 50 in each). In which 100 questionnaire was collected successfully from the users and a number 50 questionnaire was randomly selected for the analysis of data.

Table 2: Category of User

Sl. No	Category of User	Frequency	age
1	Students	41	82%
2	Faculty	09	18%
	Total	50	100%

ELECTRONIC RESOURCES AND ACADEMIC LIBRARY

In modern library the electronic resources are becoming more and more important. The printed resources are now being digitized, which has given rise in increases of the availability of books and journals in the electronic format. Ibrahim, *Ahmed Elhafiz. (2004)* The electronic books are helpful because of their easy portability and its feature of incorporating more than one book in a single hand held device. The published materials are also available on open access platform. This helps the poorer to get the information required free of cost and bridge the digital divide.[4]

Electronic Resources: Electronic resources are those resources which include documents in electronic or e-format that can be accessed via Internet in digital library environment. E-resources are that electronic product that delivers a collection of data, be it text, image collection, other multimedia products like numerical, graphical mode for commercially available for library and information centre's. These may be delivered in on CD-ROM/DVD, over the internet and so on. **(Sinha, 2010)**. According to Wikipedia, Electronic Resources means "Information (usually a file) which can be stored in the form of electrical signals, usually on a computer; Information available on the Internet". According to Library and Information Technology Glossary "Term used to describe all of the information products that a library provides through a computer network.[7]"

According to **Dadzie, Perpetua S. (2005)**, an electronic resource is: "Material (data and/ or program (s) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to a computerized device (e.g., CD-ROM drive) or a connection to a computer network.[2]"

According to **Ray, Kathryn and others (1998)** "A publication in digital format which must be stored and read on a computer device. There are two types: Direct access: these are physical objects such as CD-ROMs, diskettes, computer tapes, and computer cards, containing text, images, software, etc.[5]"

Need of E-Resources: E-Resources enable the librarian to provide better service to the user community. The few considerable points are mentioned bellow:

- To get access to an information source by the more than one users.

- E-Resources can be searched quickly.

- These can be found easily by the user.

- These resources can be stored in huge amount.

- Amount of time spent on the E-Resources use.

- Analyses the purpose of using e-resources by respondent

- Know different types of e-resources commonly used by respondents

- To collect, store, organize information in digital form.

Characteristics of Electronic Resources: Electronic resources are an integral part of the educational system whose primary function is to serve users. Electronic sources are advantageous to the users, as the information can be delivered directly to the users; users can specify his/her information needs and information is obtained speedily. Electronic information also provides a number of advantages compared to print sources including fast and easy access, especially when users are searching

retrospectively. **Smith, Erin T. (2003)**. The main advantage is for distance users with limited time to access the library since they are now able to access information outside of the library.[8]

The characteristics of electronic resources can be pointed as:

- Electronic resources can be used from anywhere at any time. There is no time or geographical boundary.

- Same database or electronic records can be used by several users at a time.

- Electronic resources do not require physical space.

- They can be easily accessed, organized, revised, rearranged, archived and retrieved.

- Hyperlinks lead the user to the related information.

Impact of Electronic resources on library user:

- Electronic resources bring the library to the user, at work, at home and at anywhere.

- Support full text searching and browsing facility, where finding information is very easy.

- User can get current information as it can be updated continuously.

- Electronic resources are always available and never checked out, miss shelved, or stolen, because of electronic format.

- Electronic resources may save time and money of the use.

Limitations of Electronic Resources:

- *Licensing:* E-Resources need the license from the publisher to the library for making use of it.

- *IPR:* E-Resources can be easily copied and forwarded to the another person so librarian should be alert about IPR (Intellectual Property Rights).

- *Standards of metadata:* There are standards for metadata description like MARC21 but the available e-resources in the market are not standardizing by MARC21.

- *Technological obsolescence:* The hardware and software obsolescence is one of the major risk of using electronic resources.

- *Low budget:* Libraries are non-profit organization so they cannot purchase and afford the costly electronic resources.

- *Skill manpower:* To handle the electronic collection the proper skills are required among the staff but libraries are lacking of skill manpower.

- *Lack of infrastructure:* Electronic collection is supported by Information and communication Technology components.

Academic Library: An academic library is a library that is attached to a higher education institution which serves two complementary purposes to support the school's curriculum, and to support the research of the university faculty and students. Academic libraries must determine a focus for collection development since comprehensive collections are not feasible. Librarians do this by identifying the needs of the faculty and student body, as well as the mission and academic programs of the college or university. (From Wikipedia, the free encyclopedia)

An academic library is the library associated with a degree granting institution of higher education. Academic libraries are identified by the post-secondary institution of which they are a part and provide all of the following:

1. An organized collection of printed or other materials or a combination thereof.

2. A staff trained to provide and interpret such materials as required to meet the informational, cultural, recreational, or educational needs of clientele.

3. An established schedule in which services of the staff are available to clientele.

4. The physical facilities necessary to support such a collection, staff, and schedule.

Major Finding

On the basis of the above analysis and observations, it seems that the entire selected library provides electronic resources for their user and all the respondents [Student, Researcher, Teacher and Academician] are familiar with it. The major findings of this study are given below:

- Maximum users of all the university libraries are preferred to use e-journal than any other electronic resources.

- Majority of the users use e-resources in most days which is a good sign.

- Most of the users use electronic resources for learning and research purpose.

- The users are highly benefited by using

e-resources because they get current information and the data can be retrieved quickly.

- Most of the users get it difficult to find relevant information, which is a major problem of using e-resources.

- Though some libraries provide orientation program, maximum users required to get presentation of different resources and IT training.

- Majority of the users consider that e-resources save their time and money and they get up-to-date information which is a great impact of using e-resources.

- A large number of users indicate that they have a high level of success in research/academic work for using e-resources.

- Most of the users feel comfortable to use e-resources.

CONCLUSION

The importance of electronic resources in academic library is increasing day by day. Now a days the electronic resources has changed the traditional library system and they have a great advantages over print collections. As the academic libraries are mainly used by the students, teachers and researcher, electronic resources have a great impact to their academic and research work. However, electronic resources have both merits and demerits. Although it will be difficult to overcome every barrier in a short time, some recommendation has been made to provide much better services particularly in the usage of electronic resources to the user by the selected libraries.

Recommendations

- The infrastructure facilities for accessing e-resources by the user should be developed.

- The libraries should subscribe more e-resources to provide better service to their users.

- The budget of the libraries should be increased for subscribing more e-resources.

- Before subscription, a survey on users should be done at regular interval to receive information and suggestions from the faculty member and students, which need to subscribe or not.

- All the libraries should organize some training program for their users.

- Skilled library staff should be appointed for better service.

- Bandwidth of internet connection should be increased to minimize download time.

- Library websites should be monitored continuously.

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A Study on Inculcating Reading Habits among Students of Government First Grade Colleges of Chikkaballapur District

Vanitha. M.A

Abstract

Reading habits are calculated as how much a person read, how often they read, when they read and what do they read. Reading can be summarized as a habit that involves books, printed articles and electronic materials. It varies differently of how each material can affect their reading habits. This paper aims to look in depth and compare the reading materials of secondary and tertiary school students in a few countries including Malaysia, United Stated of America, India, Vietnam, Sri Lanka and Nigeria. Their preference in terms of the types of books they read will differ throughout the whole article. While approaching the reading materials that they are interested in, the authors look deeply in their reading attitudes and the students' environment on how they perceive reading. The reading habit gives a possibility to determine the relationship between their reading attitudes and how the surroundings might affect them especially in school and universities. In order to find out the students' reading habits, it is essential to understand their attitudes towards reading, the environment and the reading materials that they prefer.

Keywords: Reading Habits; Reading Culture; Reading Attitudes.

INTRODUCTION

Reading is an essential tool for learning exchange and the habit of reading in a person is an academic activity that builds abilities in reading methodologies. Through reading, information can be obtained through reading printed and non-printed type of materials. For instance, books, magazines, electronic journals etc. *Walia & Sinha (2014)* assert that reading is regarded as a process, a mode of thinking and a kind of real experience, and it involves many complex skills: the ability to perceive printed words, to skim for information and then perhaps to read intensively.[12] According to Kutay (2014), reading improves the thinking ability by giving new concepts and ideas and enhances vocabulary and language which is essential in verbal communication. Meanwhile, reading and academic achievement are essential for research workers and educationists to know that every child whether he or she is gifted, average, normal or backward etc, should be educated in his or her own way but if he or she possesses good study habits, he or she can perform well in academics and in

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every situation (*Owusu-Acheaw & Larson, 2014*). To fulfill numerous types of knowledge process, it is crucial to start reading at an early age to seek knowledge more effectually.[11]

Wan Dollah et al. (*2017*) specified that reading habits play important role in enhancing students' academic performance in schools. In order to achieve successful academic performance among students, parents must give more attention to monitor their children's education progress at home. It is the reading habits that helped students in getting meaningful and desirable knowledge. Reading habits are what it needs to create a literate society. *Owusu-Acheaw & Larson* (*2014*) study found that reading habits determine the academic achievements of students to a great extent. Both reading and academic achievements are interrelated and dependent on each other. Students often come from different environments and localities with different levels of academic achievement. Therefore, they differ in the pattern of reading habits.[10]

The activity of reading is regarded as a habit when it is repeatedly carried out. In measurable terms reading habits is often considered in terms of the amount of materials being read, the frequency of reading as well as the average time spent on reading (*Wagner, 2002*), and this habit can be cultivated (*Wijesuriya, 1995*). Reading, which is a long-term habit starting with the very early ages, is the prominent gateway to the knowledge room. It can be assumed as a practice that assists individuals to gain creativeness and develops their critical thinking capacities. In this sense, reading habit is an important tool for the development of personalities and mental capacities of individuals. In addition to personal and mental developments, reading is an access to social, economic and civic life (*Clark and Rumbold, 2006*). Moreover, all reading patterns in terms of emotional response enhance emotional satisfaction of individuals.[5]

To make it simple, reading habits are calculated as how much a person read, how often they read, when they read and what do they read. Are students still reading books up until today? Or the reading habits among students have been on the decline? Reading can be summarized as a habit that involves books, printed articles and electronic materials. It varies differently of how each material can affect their reading habits. Since reading can be universal, reviewing blogs, looking at news online can also be seen as reading so as long as there is a written paragraph on sight. This paper aims to look in depth and compare the reading materials of secondary and tertiary school students in a few countries including Malaysia, United Stated of America, India, Vietnam, Sri Lanka and Nigeria. Their preference in terms of the types of books they read will differ throughout the whole article. While approaching the reading materials that they are interested in, the authors look deeply in their reading attitudes and the students' environment on how they perceive reading. The reading habit gives a possibility to determine the relationship between their reading attitudes and how the surroundings might affect them especially in school and universities. In order to find out the students' reading habits, it is essential to understand their attitudes towards reading, the environment and the reading materials that they prefer.

ANALYSIS OF READING MATERIALS

The phrase above explains on the beauty of reading and how it affects the life of readers. Reading is as important as reading materials are as reading materials ignite the spark of reading in a person. Reading materials play a significant role in maintaining reading interest in a person. In other words, when a person has found the book he loves, he would look forward to reading it. This encourages him to read more. The same goes for students especially in various education level. The reading materials available in the library drive the students to read and explore more on the world of reading. Based on a research done by *Owusu-Acheaw* (*2014*), the reading habits of students of Koforidua Polytechnic in Nebraska, 62% out of 1000 students choose to read lecture notes when they visit the library. Unlike the 62% of the students, 25% of them prefer to read textbooks in the library. As for the other 3% and 10%, they are more likely to read novels and other materials available in the library. From the statistics above, it is clearly stated that majority of the students prefer academic reading materials notes especially when they are in the library. This is one of the reasons why they have a high level of academic performance. They prefer to spend their leisure time by focusing and improving on their academics.

Otherwise, the Turkish High School students in London also have their own preferences when it comes to choosing reading materials. As for this one, it includes other different regions in London. The reading materials preferred are the ones outside of school. 89.7% of the students prefer to read novels while 70.2% prefer magazines as their reading material. Then, 66.5% of the students like to read materials on websites. The rest prefer other materials (*Kutay, 2014*). According to the

statistics above, fictions are highly preferred by students especially teenagers because fictions are non-academic books and are usually more fun to read as compared to nonfictions. This is common among teenagers because the contents of fictions are usually more relate to them.

As for the students in Vietnam, they prefer the traditional reading materials which are printed books. There are about 59.6% of them who prefer to read fictions. It is undeniable that the contents of the fictions are found to be more interesting as compared to non-fictions. According to the pie chart, smart phones and computers were reading platforms that they use (*Khoi, 2016*). There are students who prefer online reading materials so that reading can be done anywhere and at any time. E-books applications, especially, have made it easier for them in terms lowering cost, consuming less energy and time. Free e-books applications can be installed on App store or Google Play Store. Free applications are one of the factors that encourage students to read.[8]

In addition, the reading materials most Sri Lankan students prefer to read are relevant academic books. The response rate for such reading materials is 320. As for novels, the response rate is 158 which is half of the response rate of relevant academic books. Surprisingly, the response rate of newspapers is 195 (*Kulatunga, 2016*). This indicates that Sri Lankan students prefer to read newspapers more than novels. One of the possible reasons why the response rates stated above are as such is because these students would want to gain knowledge by reading academic materials. Non-academic materials also help in improving the students' grades. However, they highly prefer reading materials which are related to academic.[9]

Malaysian students have their own preferences as well when it comes to reading materials. According to *Dollah et al.* (*2017*), 44.8% of the students prefer online reading materials. In this technological era, reading materials can be obtained easily from the Internet. Besides, 20% of them would choose magazines over other reading materials. Magazines are usually easier to read as the contents of the magazines are little. Magazines are usually read during leisure time. The other 18.1% and 17.1% prefer newspapers and books. As traditional and conventional printed materials may be, some students get more satisfaction by reading them.

Hence, students of different countries have different preferences. Some choose academic materials as their preferred materials while others prefer something else. One of the importance of reading materials is they help to sustain or maintain the readers' interest when it comes to reading. This is why institutions should plan on effective strategies to encourage students to read.

Student's Attitudes Towards Reading

Attitudes toward reading are defined as an individual's feeling about reading. It causes learners to adopt or avoid a reading situation. Attitude and interest toward reading can be related to feeling and their willingness to read. A person's reading attitude is characterized as a system of feelings related to reading which makes the student approach or maintain a strategic distance from a situation that involves reading.

Reading is generally accepted as a way of acquiring new information and new knowledge. We began by first reviewing the articles that need to be compared, between Malaysia and Vietnam readers. The first, a student's attitude is based on enjoyment in reading. Essentially, most countries have a reaction of enjoyment while reading. Based on *Husaini et al.* (*2012*), findings shown that 63% agreed that they enjoy reading. However, there were students (8%) who disagreed about enjoying reading. The findings also showed that the highest percentages (42%) of the respondents agreed that they read daily or almost every day. According to *Khoi* (*2016*), however, the country's level of enjoyment in reading, (33%) of the respondents claimed that they enjoy the activity very much, followed by (29%) of those that found reading enjoyable, (20%) share a fair relationship with it. Only a small amount of participants show little (10%) or no interest (6%) in reading at all. From these comparison, we can conclude that Malaysia is more interested in reading generally although it was unclear of what kind of things they prefer reading.[7]

Based on *Kutay* (*2014*), the study shows that students of both genders had positive attitudes into reading, but female subjects had more positive attitudes towards reading than male subjects. For example, although the students from both genders agree strongly that "reading is a skill for life" and "reading is important", females were more likely to strongly agree with these two statements. In addition, the students as a whole agreed that they enjoyed visiting libraries. However, their library habits did not support the current findings, which concluded that the majority of participants visited a library at most once or twice a month.

According to *Daniel et al.* (*2017*) stated that majority of students in Nigeria only read when

the need arises. The other reason why Nigerian students read is because the library is interesting, they are interested in lecture notes, and when there are electronic reading materials available. Studies found by *Kulatunga* (*2016*) shows that similarly majority of students in Sri Lanka only read when they need to keep up to date with their education background. Another reason why students in Sri Lanka read is to pass their examination, they also read because it is their hobby. Furthermore, to gain information, is one of the attitudes students in Sri Lanka possess.[6]

Based on *Baharuddin et al.* (*2015*), findings revealed that the majority of the students read 10 to 20 pages of text per week. Besides, they also spend time for reading between 30 minutes to an hour and 30 minutes. Gender-difference also plays a role in reading habits because the study found that female students spent more time in reading and they also read more books than male students. Socio economic status also contributed to the encouragement of reading. Most of the high socio-economic status students tend to spend more time reading many books and have a positive attitude towards reading. Furthermore, high academic achievement students spend more time in reading rather than their lower academic counterparts. Surprisingly, the researcher also found that students who are active in curricular activities read many books.[3]

A study done by *Khoi* (*2016*) showed that the students were also asked to rate the level of satisfaction with their reading time. Most of the respondents prove that they are whether feeling fine (33%) or satisfied (nearly 31%) with their current reading time. On the other hand, 17 percent of them claimed to be extremely satisfied with their time and the rest of 20% only feel slightly of the satisfaction or nothing at all. Concerning the large period of time students spend on reading, it may be justifiable for them to feel satisfied with their achievements. Moreover, the fact that almost one-third of the answers feel okay with the reading time may imply the young readers' ambition to strive for more.

Based on *Cheema* (*2014*), similarly majority of student in United States only read when they chat online. The other reason why student read in US is just they want to read their emails and reading online news. Other than that, students' purpose of reading is because they want to use online dictionary or encyclopaedia, search online information about a specific topic as well as taking part in an online group discussion. Last but not least, its purpose is to search for practical information online such as schedules, events, tips and recipes.[4]

Factors Influencing Reading Habits

The countries that have specifically been mentioned in these articles allow us to conclude that the secondary school students' age varies in different countries. Starting off with parents' influence in students' reading habits, it is an undeniable fact that parents' influence is the strongest among the rest as students are usually the closest with their parents. However, how effective is their role to encourage reading habits is the real question. *Kutay* (*2014*); *Clark and Hawkins* (*2010*) found that most of the participants (17,089 students in England) stated that they received at least some encouragement to read from their mothers.

In Malaysia, a study done by *Dollah et al.* (*2017*), found that 42.9% (students) agreed that parent had allocated reading material for learning purpose. From these two researches, it shows that parents actually put an effort in instilling reading habits in their children. However, the average Malaysia read only two books per year. Based on *Kutay* (*2014*), If it is being compared to elementary school teachers in Turkey, 64.1% of participants read 6-20 books per year (*Arican & Yilmaz, 2010*). This shows the major difference in the number of books read per year.[1]

The second aspect that plays a vital role in encouraging reading habits in secondary school students is teachers or teacher librarians. Previous research affirms also that a conscious effort should be made by all stakeholders in the educational system to promote the reading habit. In Nigeria, the participants (72.7%) indicates that using book talks, story hours and exhibition has helped in promoting reading culture. However, there are challenges that come with it. The challenges are internet syndrome, home video syndrome, phone addiction, non-integration of storytelling into the school curriculum as well as high costs of children's literature. In Malaysia, there is a program names NILAM that was intended to inhibit reading habits in students in Malaysia. From a survey done by *Husaini et al.* (*2012*), it was found that 70% of the respondents were aware of NILAM program conducted by the school resource center.

The third factor that affects reading habits is peers' influence. A study conducted by *Kutay* (*2014*), stated that 29.2% of students got recommendations for books to read from friends, which has bigger percentage than teachers. This shows that peer's influence is quite strong when it comes to reading. However, there is a stereotype that has been proved in a few researches which is reading habits

being related to a feminine act. According to *Kutay (2014)*, 41% of the students agreed that girls read more than boys. Another study done by *Husaini et al. (2012)*; Arnasalam (1994) stated that the study found that female students spent more time in reading and they also read more books than male students. Male students do not read as much as female due to the reading habits' relating to being more feminine which makes them reluctant to read. Secondary school students are usually in their process of finding themselves; therefore, having this understanding in their circle of friends is not a good influence.[2]

There are several suggestions brought up by different researches to improve this. The example of efforts that can be made by parents are by providing appropriate reading material, controlling television viewing and assist the children in their routine to balance the time. It is proven that there have been efforts made by teacher librarians to inculcate reading habits. As suggested by *Baharuddin et al.(2015)*, students can be motivated to read through storytelling, reading together, formation of reading clubs as well as provision of conducive reading environment devoid of unwarranted noise and distractions. The school library needs to provide an extensive training for students with an orientation that starts from tours, training session as well as information skills lecture for students (*Dollah, 2017*). The school can also consider providing more nicely decorated reading corners at all gazebo located around the school (*Husaini et al., 2012*). As from peers' point of view, students should avoid relying on stereotypes as it would not have done much good. Everyone is encouraged to read regardless of their gender.

CONCLUSION

The stats of perusal can be a little crosswise since not everyone distinguish version the same. Some might contemplate they do tell every Time, but in fact, all they have been lesson through are inform from the social Medias. It is purely and unfairly body to so calculate how cooperating does these students explain and how do they return towards version. The environment can affect them in a moving of how they are taught to learn. We are environed by people in this globe, and attitudes can be study by just glance and opinion interested near it. A child should be taught how to read at a youthful Time because at the mutational staging of spirit is a peak point in development clothe. If instilled at such an betimes Time and education strictly as the offspring expand, they are more similar to

retain and further better their fashion of version. It is proved from one of the concern that reading attire improves students' scholarly production. Perhaps, if they lack in lection manner in their maid life, they might not surpass in their Platonist completion and might not get admirable even in shoal. In effecting, perusal is an indispensable part of mundane vigor. Without version, message and knowledge from protracted back would not have been come on precisely as it is now. Civilizations improved on the acquaintance die down from generations all through the shallow simulate of lesson. As such it is influential for our generation and the approaching generations to sustain an eager inclination and long for cognizance; for it cannot be reaching without lection. Those around us may influence us on the version materials we follow but that should not suppress us from follow whatever figure of knowledge available to us. We all declare, regardless if remark it or not, but the amount of opportunity we put into reading, the topics we decide to peruse about, where we wish to Reading them, even who we choose to go with; that is what ascendency our interest in lection. Reading is a substance of when conditions are met; when both consistency and opinion are in melody in deportment the stint, it befit easier for them.

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Role of Digital Libraries in Development of Higher Education Institutions: A Study

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Abstract

A digital library is a league of textual, identical, scrutinize photos, graphics, sound, and video recordings that like consumers to conveniently regain instruction from a digital group. Recent advancements in data processor abundance and CPU, association technologies, e-products, networking, and internet interest have inference in a original distribute in the road libraries and their avail works. Current muse scatter a sine crowd of textbooks, dogma, newspapers, and audiovisual aid resort stored and ordered in a library for anyone to go or hostage. Information and Communications Technology has had a important reputation on libraries, and it has agitate the traditionary library impression in which print and newspaper materials are the original components of the system. Libraries are transfigurate into digital libraries in mandate to effectuate the weighty instruction blast and ascending query for intelligence. Due to the digitization of library materials and the sharp progression of technology, a unspent troop of library has emerged: the potential library. Most of us are often nonplussed by library gibberish. In this embroidery, we effort to dead the phraseology usefulness in these libraries in a business fashion. Such libraries will lengthen the effectiveness of culture in the approach eras.

Keywords: Digital library; Influence; Information; Library materials; Technology.

INTRODUCTION

We last in the digital old age, in which any item of enlightenment from any date may be found in electronic elegance. Traditionally, libraries were idea to be leger storing facilities reticent for monarchs and other jutting members of refinement. Future on, it was estimate as a library and complaint kernel, but with the approach of Information and Communications Technology (ICT), the agreed library conception was geld; Knowledge has taken the party of textbooks, and data is decent more precious now utility for dispersion rather than safety. Because of the fast betterment in technical breakthroughs in the range of ICT, use imposition has turn from customary libraries to digital libraries, electronic libraries, and practical libraries in mandate to user demand[8] (*R. Lawson 1896*).

ICT bestow for expeditious tip detention, storing, outgrowth, and arrangement, as well as a count of be-extra comforts. With the retire of data

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overfreight, it is comely tougher to liberate the property data to the suitable impersonate at the just repetition. However, we can merely move the faultless data to the emend parson at the peculiar period bless to info technologies. People in now's educate have calm attack to and experience of They demand electronic data that they can hold at any consideration and from any ground through info technologies gadgets such as PCs, laptops, and iPads, that could only be granted by electronic ascent[5] (**F. L. M. De Guzman, L. N. N. Moukoulou, L. D. Scott, and J. J. Zerwic 2018**).

A digital library is a controlled the gathering of digital or electronics data with associated services, in which data is obtained, stored, and processed using electronic equipment and requires access to these digital resources over a network. A hybrid library, on the other hand, contains both print and non-print collections and offers online and offline services to its users. Even if the terms "electronic library," "digital library," "virtual library," are interchangeable, there should be several meanings. Hybrid, electronic, and virtual libraries are considered contemporary libraries since they vary significantly from conventional libraries[10] (**M. Wang, H. Chau, K. Thaker, P. Brusilovsky, and D.**

He 2021).

DIGITAL LIBRARY

All services are entirely automated in digital libraries, and all materials are available in digital format. These libraries are diverse in scope, including work on data and how to digitize, preserve, discover, connect, imagine, utilize, distribute, maintain, and distribute data. A digital library is a collection of digital computer, storage, and communication equipment, as well as information and software.[9] (**N. Tomal and M. B. Yilar 2019**). There are primarily two categories of information in a digital library:

- *Born digital:* This details is digitally generated and kept.

- *Digitalized:* Data is stored in physical forms, which are then transformed to virtual or electronics ones using suitable gear and technology.

Architecture of Digital Library System

Architecture of digital library system mainly consists of 4 things user interface, search system, handle system and repository (Fig. 1).
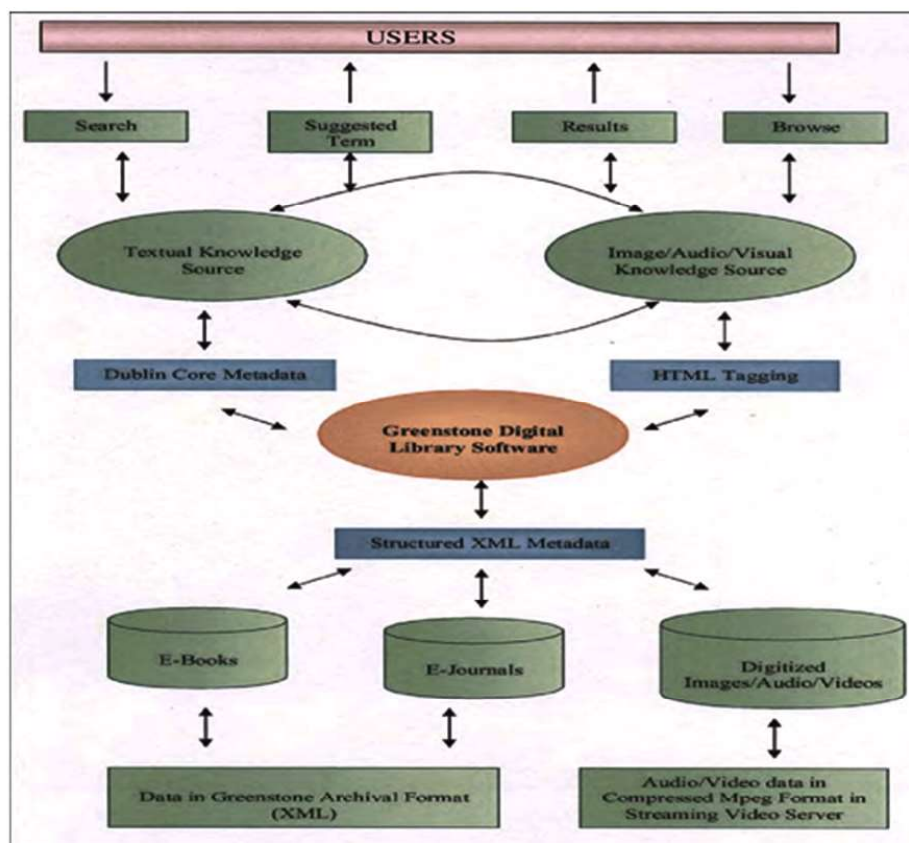

Fig. 1: Diagrammatic representation of architecture of digital library system [DLIB]

User Interface

Both the pilots and prototypes contain two client interactions: one for library patrons and another for librarian and systems admins who manage the collections. Each user interface is split into two parts. A conventional Internet browser is used for the real interactions with the user. This may be Netscape Browser or Microsoft Internet Explorer. The browser communicates with client services, It serves as a link among the website and the rest of the computer Client facilities allow the user to select from which to browse and what to collect; they perceive details organized as electronic objects; they try to negotiate terms and circumstances, handle connections among electronic objects, memorize the country of the communication, and transform among the processes used by the numerous sections of the system; and they transform among the processes used by the numerous components of the framework; and they transform among the processes used by the numerous sections of the framework.[1] (*Alaca, E 2017*).

Repository

Digital items and other information are stored and managed in repositories. Many repositories of different sorts, such as current repositories, legacy databases, and Web servers, may be found in a big digital library. The repository access protocol is the name of the interface to this repository (RAP). RAP has many features, featuring explicit description of right and permission required before a clients may acquire a digitally object, support for a broad range of electronic object dispersion, and an accessible design with well-defined interfaces.[4] (*K. S. Chung, H. W. Byun, S. Kim, and H. C. Yu 2018*).

Handle System

Handles are identities that might be utilized to locate down Internet assets such as electronic items throughout time and manage material in any repository or databases. Whenever utilized with the repository, the handle system takes a handling for a digitized object as inputs and returns the identity of the archive wherein the object is stored.

Search System

The electronic library system is constructed on the assumption that there would be a large number of indexes and catalogues that may be searched to find details previously extracting it from a repository. Separately, those indices might be managed and supported a number of techniques (*M. Kovač, A. Phillips, A. van der Weel, and R.*

Wischenbart 2019).

Virtual Library

Another kind of Digital Library is a Virtual Library, which serves as a doorway to knowledge that is accessible electronically elsewhere. This is done to underline that the Library does not have any material of its own. For a decade or more, librarians have used this word to describe a library that gives access to dispersed content in electronic format through links given locally. "Remote access to library and other information components and services, merging an on-site gathering of existing and strongly utilised components in both write and digital form with a digital network that offers entry to and delivery from external worldwide library and commercial details and knowledge sources" according to Gapen (1993). Virtual libraries have become a worldwide emblem of the information access paradigm due to its quick and extensive access to current information contents.[2] (*A. Cayvaz, H. Akcay, and H. O. Kapici 2020*).

The old style emphasis of librarians on the choice, classification, and administration of information resources such as books and periodicals has shifted thanks to the Virtual Library. The virtual library prioritizes accessibility above the requirement to account for the time needed by these technological operations. Virtual Libraries have prompted libraries, researchers, publishers, and document delivery companies in both developed and developing nations to form new collaborations for the benefit of scholarly communication.

The goal of The purpose of the Online Libraries is to aid education and information gain., create a more solid foundation for education, and improve quality of life by using ICT based tools to access digitally accessible (ideally on-line) books, materials, and periodicals. A Virtual Library gives remote access to a wide range of nationwide and global content (e.g. curricula, learning materials, books, journals, periodicals, and newspapers), as well as conventional library and information source services. As a result, virtual libraries integrate electronic contents with an electronic network that allows for access to and distribution of such items.

To be a successful instructional tool in the public sector, it must react to the demands of potential users students, instructors, researchers, and academics and offer inexpensive access. Building public domain collections that are available via, for example, free software applications on the basis of low Internet rates should be prioritized.

Function of Virtual Library

- It enables worldwide access to up-to-date information in a timely and efficient way.

- It has revolutionized the old library method of exclusively cataloging book items.

- Non-book materials (NBM) cataloging encompasses not just databases but also websites.

- The focus is on access rather than collecting.

- It saves time

- It creates a digital gap since only wealthy nations with the finances to automate and meet the infrastructure needs for Virtual Library services can afford to sustain them.

Advantages of Digital Library

- There was no need for consumers to travel to the library since they could instantaneously get the same knowledge from anywhere on the planet through the internet. He or she just has to input the library's URL to access all of the services and information available at the library. This saves time for users, as all information is available with a single click.

- Availability Library are opened every day of the year, 24 hours a day, and 365 days a year. Because computers are unaware of day, night, weeks, and months, all digital On the internet, content is available 24 hours a day, seven days a week. Every piece of information is accessible online at any time.

- Multiple users may access the same resources at the same time. Users may access the same information several times and at the same time without experiencing any difficulty. It saves consumers time and money, which is cost effective and leads to improved services tailored to the requirements and desires of the users. Multiple accesses refer to when a large number of people utilize the same resource at the same time or after a period of time. In conventional libraries, however, a single user may only access a resource once.

- The contents of contemporary The contents are incredibly well arranged, enabling users to rapidly go from the catalogues to a specific books, and then from the novel to a certain chapter, and so on. A library contains structured archives of humans learning, allowing us to quickly explore a certain subject and acquire materials connected to it through search. We do a systematic search on the subject, moving from a catalogue to a book, next to an indexes, then to a chapters, and so on, as needed.

- Users may use any term that is connected to a word or phrase in the complete collection to search for or retrieve information. Users will appreciate the user friendly interfaces and one click access to the library's contents. Users may simply search any word, phrase, symbol, or number using interfaces known as search boxes. Using search, we can navigate around our subject. The consumer saved energy by not having to hunt for material, provides rapid access to their subjects, and is simple to use.

- Traditional libraries have storage and space issues since their collections are in print form, which takes up more room, but electronic or digital libraries hold more information in a less amount of area. Thousands of eBooks, periodicals, journals, and other items may be kept on a single hard drive, therefore it's crucial to understand that the digital library requires relatively little space to operate and provide services. When a traditional library runs out of room, digitizing its collection is the only option.

- Nowadays, libraries are interconnected by high speed internet connections, which is referred to as networking. Resources may be shared via link sharing. Users do not need to travel to the library; they may readily access the library's materials and services through the internet. Users may quickly access many libraries' databases with a single click since libraries exchange connections to other libraries' databases, saving time and assisting users in their search for relevant information.

- Keeping an electronic, virtual library is far less expensive than maintaining a conventional library. A traditional library must accept higher costs for upkeep, personnel and professional pay, and so forth. This may be alleviated by electronic, virtual libraries, since these contemporary libraries need just a one time investment until technology evolves, after which fewer specialists are required to maintain the library.

LIMITATIONS OF DIGITAL LIBRARY

Copyright

Because the information or resources of one author may be easily transferred by others without his knowledge, digitization goes against the copyright law. The key difficulty is how libraries transmit information while yet preserving an author's intellectual property. There are strong penalties for violating copyright laws, yet it is more difficult to protect an author's or publisher's intellectual property rights in the digital age.

Efficiency

Because of the information explosion, there is a lot of information on certain subjects, making it harder to identify the proper information. The information's authenticity is under doubt.

Website Speed

When more computers join, the burden on the server increases, making the website sluggish. If no new technology emerges to address the problem, the Web will soon be swamped with failure notifications. Because digital information contains music, video, and documents that are large in size and demand higher bandwidth speed, it's challenging to give the same speed of access because technology is aging.

Initial Cost

The initial cost of contemporary libraries is quite costlyof programs, equipment, communications connections, and other devices are included. Library cannot afford to acquire them since they are not profit making companies; instead, they rely on any institution that gives cash for the functioning and operation of the libraries.

Bandwidth

Libraries will need high transfer rates for the delivery of multimedia content, but bandwidth is dwindling day by day owing to overuse and internet saturation. Slow bandwidth causes digital information to download and upload slowly, requiring users to spend more time looking for and obtaining their desired content.

Atmosphere

Modern libraries are unable to replicate the atmosphere of old libraries. Reading written material is also easier for many individuals than reading information on a computer screen. Many individuals prefer to read print information due to a lack of technical understanding. Furthermore, bad behaviors are a huge issue.

Preservation

As technology advances, libraries become out-of-date, and their material may become unavailable. Many new formats will emerge in the future, making it challenging to retain library contents in a standard format that we can utilize in the future.

DISCUSSION

A library is a heap of contrivance, publications, or inconstant typify of size that are convenient for habit equivalent than descry. It is amenable for sustain course data in command to equal the indispensably of customers on a orderlly base. A library may be a regal advantage, a de facto surrounding, or both, and move substantial or digital paroxysm lining. A library's group may intercept scriptory textbooks and several corporeal materials such as DVD, CD, and tape spat, as well as receptibility to significant, descant, and variable materials dwelling in bibliographic database management system.

Public organizations, probable as a conduct, an system/universities, a society, or a solitary impersonate, may constitute and conduct a library, which may sift in adjust. Librarians, who are drag and skillful in positioning, desire, distributing, and arrangement physical, as well as charged instruction indispensably, sail, and psychoanalyze ample total of data utilizing a kind of origin, are convenient via libraries,

Library form often shape pacific and becoming meditation spot, as well as national areas for collectivist scrutiny and collaboration, and may also become its technological resort, preference as laptops and Web union, advantageous to the notorious. The library's clientship and, as a arise, the benefit it condition depart hang on the bounteous of library: customers of a education, the expectations of a usual library deviate from those of a particularize bibliothec. Libraries may also assist as commonness heart, where individuals can hearken Participating in ages training series and initiatives. Advanced libraries undertake a multifariousness of benefit. erudition handy through electronic methods, even from abode via the Internet, diffuse their avail beyond the material boundaries of a affability. As a consecution, data support in an electronic old age has drop relatively frank, along since important can be furnish or patent electronically by community in widely flung areas and variegated brood.

A digital library, also assumed as an electronic library, an internet library, a digital sacristy, or a digital mass, is an online databank of digital innuendo, such as textbook, still photos, vibe, video, digital precept, or other digital media formula, or a library obtainable over the internet. Objects may be made up of finger significant such as print or appearance, as well as digital capacity that was appoint in the first office, such as account projection lodge or unworn media postings. In augmentation to fund significant, digital libraries assign users to systematize, seek, and restore instruction from the group. Individuals or family may allege digital libraries, which can wander in dimension and range. Digital essential may be locally stored or available remotely through electronic computer cobweb. Interoperability and sustainability endow these advertisement recovery technologies to portion data with one another.

CONCLUSION

Modern libraries conclude mameluco, electronic, digital, and moral libraries, all of which are interchangeable. Modern libraries will not copiously repay the natural air of print materials, but to effectuate authentic use imposition and technological furtherance, digitalisation must be instrument so that libraries suit mulatto in independence and in contactor with their users. Although the incipient suffering of digitization is influential, scrutiny discover that after digitalisation is fulfill, the expense of order and support This library's collections would be humble than a emblematic library's. The quotation of digitization is incident Time by age since technology is decent obscure with each surpassingly age, online disclose is spreading, and destroyer query are trek off from print fountain.

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Digital Marketing of Library Products and Services Among Librarians in Selected Engineering College Libraries of Karnataka

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Abstract

The study canvassed for the concept of digital marketing of library products and services among librarians in selected engineering colleges of karnataka. This study investigated the existence of the concept of digital marketing in selected engineering college libraries as well as the benefits derived from digital marketing of library products and services. The study which was administered to 100 librarians in four engineering colleges of karnataka, out of which 65 librarians responded. An item by item analysis of result was carried out by means of a table and simple percentage of respondents score. The result indicated that majority of the 65 librarians who completed and returned the questionnaire had a positive attitude towards digital marketing/pricing of library, information and knowledge products and services and are also aware of the numerous benefits of digital marketing in the digital age. Based on the result of the survey, it was concluded that certain information products and services can be marketed/priced and that the age-long practice of giving all manner of library, information and knowledge services free of charge should be reconsidered.

Keywords: Digital Marketing; Academic Libraries; Library Products; Information Marketing; Knowledge Management.

INTRODUCTION

The concept of digital marketing has gained prominence since the advent of the Information and Communication Technology (ICT). According

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to *Al-bahrani, M (2009)* the term marketing refers to the management process which identifies, anticipates, and supplies customer requirements efficiently and profitably. While digital marketing on the other hand refers to the promotion of products or brands via one or more forms of electronic media. For example, advertising mediums that might be used as part of the digital marketing strategy of a business or organization could include promotional efforts made via the Internet, social media, mobile phones and electronic billboards, as well as via digital and television and radio channels. However, digital marketing of library, information and knowledge products and services is a comprehensive term that describes all the

processes and interactions that result in promotion and sales of different information products and services for the library and information firm using digital technologies.[2]

As librarians understand the confusion associated with information overload, it is their responsibility to device means to keep the students aware of the shortcomings of unevaluated internet information. To ameliorate some of the consequences of ICT resulting in underutilization of academic libraries, effort directed to promoting and creating awareness of library services is imperative. Librarians can promote the use of the library through other means such as marketing of library services to its users.

Marketing of library services according to *Jestin and Parameswari* **(2002)** involves activities such as identifying user's needs, designing suitable services or products to meet their needs, communication and distribution to inform, motivate and serve the users. It is a systematic process which entails the combination of planning, concentrating on customer needs and satisfaction with appropriate products and services.[9] **(Kendadamath, n.d.).** *According to Broady Preston and Steel* **(2008)**, it encompasses staff within the organization, product perception within the society and any potential method of customers receiving a message about the organization, its products and services.[11]

The information age has brought with it growth in information generation and use in a period where there is excess information explosion. This has led to unprecedented growth in the information industry, and also dramatic growth in services, revenue, and coherence of the information and knowledge industry over the last decade, where a society that consumes and generates the most knowledge and information is perceived as the strongest society. Though the marketing of knowledge and information services is a concept of comparatively recent origin, it has now emerged as an important area for libraries and information centres with the emergence of digital technologies. The main objective of digital marketing of library services to customers is to initially identify current and potential users and begin to develop a relationship with them. Academic libraries can achieve such relationship with users through the application of digital marketing strategies in rendering library services. Digital marketing strategies are processes that allow an organization to concentrate its resources on the optimal opportunities with the goal of increasing patronage and achieving a sustainable competitive advantage **(Kendadamath, n.d.)**. Without marketing strategies, library users are unlikely to be fully aware of what the library can offer them. Although, factors such as perception, attitude and digital skills have been noted as some of the factors militating against the marketing of library, information and knowledge products and services in academic libraries.[7] **(Alemna, 2001; Al-Bahrani, Gray, 2004; Estall and Stephens, 2011; and Pathak and Jain, 2013).**

MARKETING OF DIGITAL SERVICES

Libraries should have a clear plan to market their digital services. Several studies have been conducted to look into this aspect. Libraries need to adopt a coherent approach instead of scattered ones. Further, it is of utmost importance to deliver the right service at the right time to appropriate users in the right place in a cost effective manner.[4] Therefore, libraries should try to formulate marketing strategies. It will also aim to satisfy the five laws of library science. Libraries must continue to evolve to respond to the digital, financial and societal changes.[4]

If libraries do not come up to the expectations of the users, then commercial ventures may grab the opportunity. To counter the situation, the National library of Scotland (NLS) decided to introduce effective marketing relations to ensure the awareness of library sources and services among stakeholders. Harrington & Li found that marketing initiatives require thorough examination of competitors.

Digital marketing Techniques

- A variety of techniques has been used to promote library services and resources. *Nkanga* **(2002)** found that promotional techniques such as personal contacts, circulars, memos, telephone calls, meetings, direct mailing, displays, talks, newsletters, library tours and leaflets were widely used.

- The tools used for promotion were reviewed and the promotion activities of the studied department's information products were described by *Cummings* **(1994).** Many forms of techniques such as a combination of outreach programmes, holding lectures, changing library exhibits, library tours, classroom instruction, one-on-one appointments, library homepage, online catalogue and one-on-one training were suggested to promote library services and resources **(Dodsworth 1998).**[3]

OBJECTIVE OF THE STUDY

The main objective of this study is to examine the digital marketing of library, information and knowledge products and services. Specifically, this study seeks to:

- Determine the extent to which librarians in academic libraries carry out digital marketing of library, information and knowledge products and services.

- Examine the benefits of digital marketing of library, information and knowledge products and services in selected Engineering college libraries in Karnataka.

- Investigate the challenges librarians encounter in the digital marketing of library, information and knowledge products and services in selected Engineering college libraries in Karnataka

REVIEW OF RELATED LITERATURE

The Concept of Digital Marketing of Library Resources.

In the view of *Kumar (2014)*, marketing of information products and services is a concept of sensitively serving and satisfying the needs of all those who are involved in education, scholarship, research and development.[12] *Duke and Tucker (2007)* added that the major reason for marketing in academic libraries is to fulfil the library's mission, meet the needs of users, and attract new and current users, and highlight unique services and programmes as well as to increase the use of library service and products.[6] *Wu (2012)* therefore stressed that marketing of library services is not all about telling the public what collection and services are being offered but contribute to building a relationship with library customers.[14]

According to *Singh (2009)* marketing of library services is the process of planning, pricing, promoting and distributing goods and services to create exchange that satisfy the library and the customers. From this definition, it can as well be deduced that mere provision of library resources in the library is not enough rather making them accessible and useable to the satisfaction of the users is paramount.

The Services of Engineering College Libraries

Academic libraries have many services and products that can be marketed. Each library needs to identify what service each user needs at a given time and how to market and satisfy the need. This is because marketing is not just about promoting new services and products but also bringing awareness to clients of existing services and products and determining their appropriateness *Sharma & Bhardwaj, 2009*. Hence the need for academic librarians to market library services to users. The Engineering College librarians have been charged with the description of document (indexing and abstracting), their content, features and purpose including the organization of such document. Indexing and abstracting is a means of such description to provide access to their identification and retrieval. Marketing indexing and abstracting services by academic libraries will enhance user's awareness on how to locate materials in the subject area they need as well as providing summaries of the contents of reading materials in the library thereby serving as time saver for library users.

Successful marketing includes the art of deciding that strategy / technique used in different situation. As non-profit making organizations, library and information centres cannot avoid marketing practices. Although libraries/information centres as non-profit organizations have three constituencies, e.g., clients to whom they provide services, the parent institution from whom they receive funds and donor agencies; but should engage in digital marketing of information products and services because of the numerous benefit associated with digital marketing.

The Benefits of Digital Marketing of Library Resources.

Below are some of the benefits of digital marketing of library, information and knowledge products and services according to Oyeniyi (2016):

- *Global reach:* with only a small investment, a library or information centre can market their products and services to the globe through a website or social media tools.

- *Greater engagement:* With digital marketing you can encourage your prospects, clients and followers to take action, visit your website, read about your products and services, rate them, buy them and provide feedback which is visible to your market

- *Trackable, measurable results:* measuring a library's online marketing with web analytics and other online metric tools makes it easier for a library to establish how effective their campaign has been. You can obtain detailed information about how

customers use your website or respond to your advertising.

- *Personalisation*: if your customer database is linked to your website, then whenever someone visits the site, you can greet them with targeted offers. The more they buy from you, the more you can refine your customer profile and market effectively to them.

- *Openness:* by getting involved with social networking and managing it carefully, you can build customer loyalty and create a reputation for being easy to engage with.

Reduce cost

Your business can develop its online marketing strategy for very little cost and can potentially replace costly advertising channels such as Yellow Pages, television, radio and magazine.

Simple to measure

You can see in real time what is or is not working for your business online and you can adapt very quickly to improve your results. For measuring traffic to your site you can use Google Analytics to measure specific goals you want to achieve for your website or blog and most packaged email marketing solutions provide good insight into how many people are opening, reading and converting from your emails.

METHODOLOGY

The Researcher gathered information from sixty-five (65) librarians who responded out of 100 questionnaires issued out to librarians in four selected Engineering College libraries in Karnataka namely:

- Bangalore Institute of Technology Library, Bangaluru.

- Sri Jayachamarajendra College of Engineering Library, Mysore.

- Canara Engineering College Library, Mngalore.

- R.V. College of Engineering Library. Bangaluru.

Responses by Librarians from Four Academic Libraries.

Name of Academic Library	Respondents	% Age
Canara Engineering College Library, Mngalore	14	22%
R.V.College of Engineering Library, Bangaluru	23	35%
Bangalore Institute of Technology Library, Bangaluru	19	29%
Sri Jayachamarajendra College of Engineering Library, Mysore	9	14%
Total	**65**	**100**

DEMOGRAPHIC VARIABLES

Table 1: Sex of Respondents

Responses	Frequency	Percentage
Male	20	31
Female	45	69
Total	65	100%

From the table 1 shows that out of the 65 respondents, 20 respondents (Respondents 31%) were male, while 45 respondents (Representing 69%) were female.

Table 2: Age of respondents

Responses	Frequency	Percentage
21-25 yrs	2	3
26-30 yrs	3	5
31-35 yrs	11	17
36-40 yrs	28	43
41 yrs and above	21	32
Total	65	100%

The table 2, it was observed that out of the 65 questionnaire collected, 3% which comprised of 2 respondents fell under the age bracket of 21-25 years, 5% (3 respondents) were between the ages of 26-30yrs, while 17% (11 respondents) were between 31-35 years. 43% (28 respondents) and 32% (21 respondents) are 36-40 years and 41 years and above respectively.

Table 3: Category of Staff

Category	Frequency	Percent
Library Assistant (Junior)	23	35
Library Assistant (Senior)	15	23
Senior Librarian	11	17
Assistant Librarian	8	12
Deputy Librarian	5	8
Chief Librarian	3	5
Total	**65**	**100**

Table 3 above, the figure shows that 35% (representing 23 respondents) of the total

respondents are Library Assistant (Junior), 23% of the respondents are Library Assistant (Senior) while 17% of the total respondents are senior Librarians. Also, 12% (representing 8 respondents) of the total respondents are Assistant Librarian while 8% and 5% of the total respondents are deputy librarian and Chief librarian respectively.

Table 4: Benefits of Digital Marketing of library, information and knowledge products and services.

Benefits of digital marketing	SA	A	D	SD
Wider/global communication	54	9	1	1
Low cost of marketing	45	12	6	2
Easy to measure or evaluate	29	32	3	1
Enhances greater engagement with users	42	9	6	8
Enhances customized services	46	14	2	3
Faster marketing	58	5	2	-
Openness	37	11	7	10
Total	311	92	27	25
Aggregate total and percent	403	(88.6%)	52	(11.4%)

From table 4 above it is evident that digital marketing of library, information and knowledge products and services comes with numerous benefits such as wider/ global communication, low cost of marketing when compared to traditional methods, enhances greater engagement with users as well as customized services as indicated by 88.6% of the total respondents. While 11.4% of the total respondents expressed a contrary opinion.

DISCUSSION

Research question one examines the extent to which librarians in Engineering College libraries in karnataka carry out digital marketing of Library, information and knowledge products and services. From the result of the study, a mere 6% of the total respondents indicated that they carry out digital marketing of library, information and knowledge products to a very high extent while a staggering 40% and 43% of the total respondents indicated that they carry out digital marketing of library products and services in a low extent and very low extent respectively. This is in line *With Estell and Stephens* **(2011)** whose study revealed that most Engineering College librarians in university libraries do not engage in digital marketing of their libraries' products and services.

From research question two, it is evident that digital marketing of library, information and

knowledge products and services in Engineering College libraries comes with numerous benefits such as wider/global communication, low cost of marketing when compared to traditional methods, enhances greater engagement with users as well as customized services as indicated by 88.6% of the total respondents. While 11.4% of the total respondents expressed a contrary opinion. This findings supports *Martney* **(2009)** who noted that there are numerous benefits that accompany digital marketing of library, information and knowledge products and services such as cheaper communication in relation to the number of persons, wider communication etc.[13]

Research question three showed that 94.9% of the total respondents affirmed that the challenges of adopting digital marketing includes low knowledge of the use digital technologies among librarians and library users in Karnataka, high cost of acquiring digital technologies, frequent obsolescence of computer hardware and software technologies, incessant power failure, poor network/internet technologies etc., while a mere 5.1% of the total respondents expressed a contrary view. This finding corroborates the result of a study carried out by *Wu* **(2012)** which revealed that the challenges facing librarians towards digital marketing library and information services and products includes; insufficient tools for marketing, lack of systematic marketing and its relevance to education, insufficient employees to work on marketing and library's poor attention to marketing.

CONCLUSION

Information is a mortal fund for general education. The increscent knowledge and usefulness of advertisement as a rise of digital supplies will no fear ameliorate the economizing of any nationality. The advice era has rise in the settlement of complaint systems and avail which afford a diversity of tip benefit and products. Therefore, libraries in Nigeria must do well to involve the digital generation in its entirely internality. This comprehends the custom of digital and internet technologies in supplies the essential products and avail of libraries and complaint kernel in this instruction Time.

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[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006; 35: 540-7.

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Article in supplement or special issue

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Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000; 71: 1792-801.

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Reference from electronic media

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

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