Indian Journal of Library and Information Science

Indexing information: The journal is indexed with Indian Citation Index (ICI), India; Google Scholar; Index Copernicus, Poland; EBSCO Publishing's Electronic Databases, USA; Library & Information Science Source, USA; National Science Library, New Delhi, ProQuest, UK; Genamics JournalSeek; Scientific Indexing Services, USA.

Corresponding address: **Red Flower Publication Pvt. Ltd,** 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091(India), Phone: 91-11-22754205, Fax: 91-11-22754205, E-mail: info@rfppl.co.in, Web:www.rfppl.co.in

Printed at: R.V. Printing Press, C-97, Okhla Industrial Area Phase-I, New Delhi - 110 020.

The Indian Journal of Library and Information Science (Print ISSN 0973-9548, Online ISSN 0973-9556, Registered with Registrar of Newspapers for India: DELENG/2007/22242) provides comprehensive international coverage of library & information science and technology. **IJLIS** is published 3 times a year by the **Red Flower Publication Pvt. Ltd.**

It presents peer-reviewed survey and original research articles on specific areas are: new information technology, education and training, human resource management, the changing role of the library, future developments, opportunities, bibliographic databases, cataloging issues, electronic publishing, acquisitions, collection development, administration, management, archives, preservation, and special collections, automation and cataloging. Its papers include letters to the editor, book reviews, calendar of events, conference reports, interviews, and much more.

Readership: Scholars, professionals, practitioners, faculty, students in the field of library and information science

Indexing information: The journal is indexed with Indian Citation Index (ICI), India; Google Scholar, Index Copernicus, Poland; EBSCO Publishing's Electronic Databases, USA; Library & Information Science Source, USA; National Science Library, New Delhi; ProQuest, USA; Genamics JournalSeek; Scientific Indexing Services, USA.

Subscription Information

India
Institutional (1 year) (Print+Online): INR 9500

Rest of the World
Insitutional (1 year) (Print+Online): USD742

Payment instructions
Online payment link:
http://rfppl.co.in/payment.php?mid=15

Cheque/DD:
Please send the US dollar check from outside India and INR check from India made. Payable to 'Red Flower Publication Private Limited'. Drawn on Delhi branch

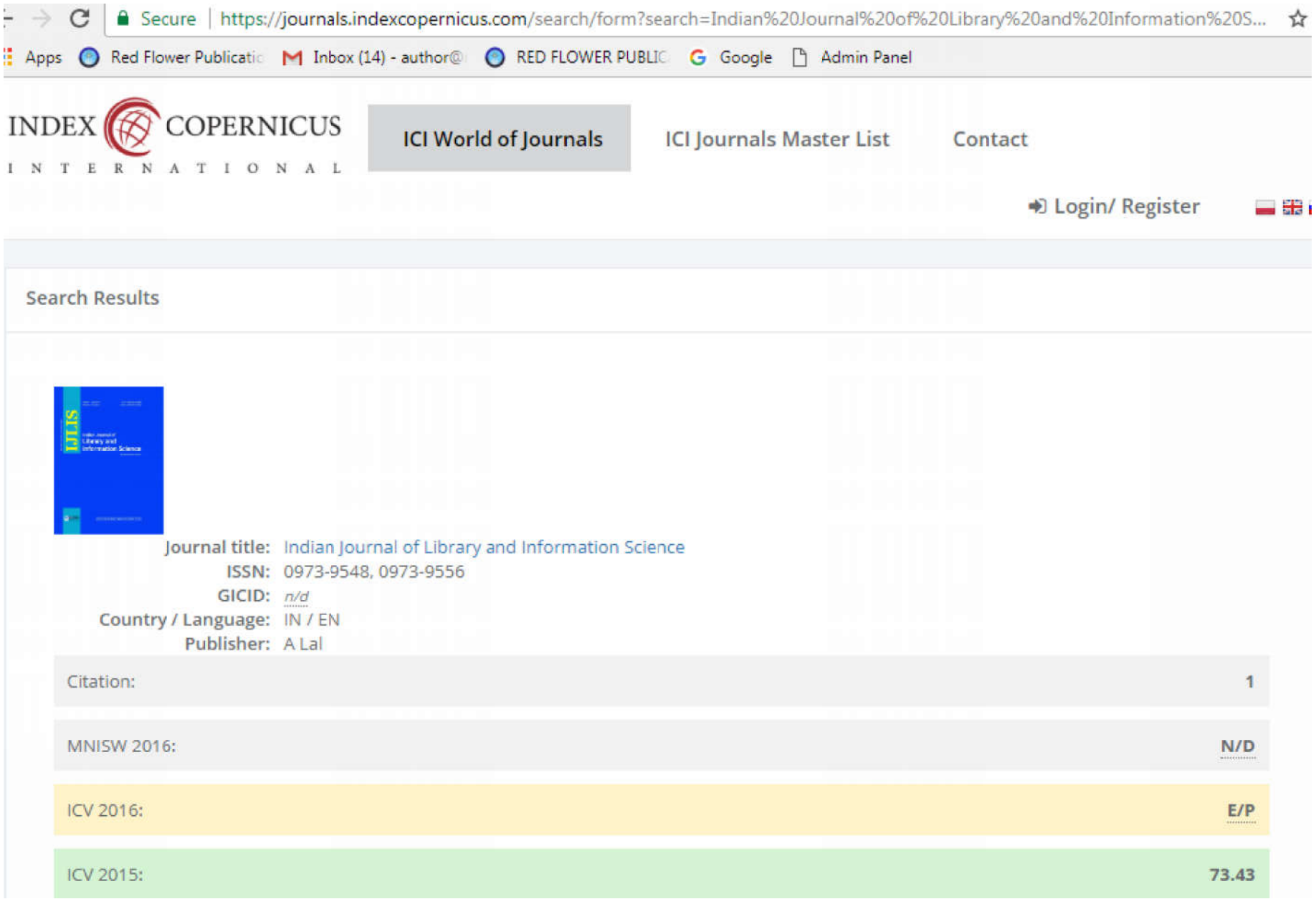
Wire transfer/NEFT/RTGS:
Complete Bank Account No. 604320110000467
Beneficiary Name: Red Flower Publication Pvt. Ltd.
Bank & Branch Name: Bank of India; Mayur Vihar
MICR Code: 110013045
Branch Code: 6043
IFSC Code: BKID0006043 (used for RTGS and NEFT transactions)
Swift Code: BKIDINBBDOS

Send all Orders to: Subscription and Marketing Manager, Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091(India), Phone: 91-11-45796900, 22754205, 22756995, E-mail: sales@rfppl.co.in, Website: www.rfppl.co.in

Indian Journal of Library and Information Science

January - April 2018
Volume 12 Number 1

Contents


Secure | https://journals.indexcopernicus.com/search/form?search=Indian%20Journal%20of%20Library%20and%20Information%20S...
Apps
Red Flower Publicatic
Inbox (14) - author@
RED FLOWER PUBLIC
Google
Admin Panel
INDEX COPERNICUS
INTERNATIONAL
ICI World of Journals
ICI Journals Master List
Contact
Login/ Register
Search Results
Journal title: Indian Journal of Library and Information Science
ISSN: 0973-9548, 0973-9556
GICID: n/d
Country / Language: IN / EN
Publisher: A Lal
Citation: 1
MNISW 2016: N/D
ICV 2016: E/P
ICV 2015: 73.43

Original Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.1

Bibliometric Analysis of Research Output of NITK

Sanjay Kumar Kaushik

Abstract

In the field of Engineering Teaching, the top institutions in India are the Indian Institute of Technology. The National Institute of Technology are deemed universities and enjoys the second priority after IITs. The present paper presents the results of a study conducted on the research output of NITK in the form of publications. Total 2589 publications were contributed in the last ten years. Highest number of publications (503) were contributed in 2016 followed by second highest (479) in 2017. The average number of authors per publication is 3.43. The degree of collaboration in the contributions under study is found to be 0.95. The major area of research output of NITK is Engineering with 48.4% of publication. The second area is computer science with 40.13% publications. The highest foreign collaboration is with United States.

Keywords: NAAC; NITK.

Introduction

In the field of Engineering Teaching, the top institutions in India are the Indian Institute of Technology. The National Institute of Technology are deemed universities and enjoys the second priority after IITs. The faculty and researchers engaged in these NITs also contribute research papers in addition to their job of teaching and research. One of the parameters to gauge the quality of an academic institution is the number of research papers contributed by its faculty and researchers. The accreditation agencies like NAAC also recognize this parameter.

National Institute of Technology Kurukshetra (NITK) was established in the year 1963. It has made rapid strides toward excellence. A sprawling lush green campus, outstanding infrastructure, state-of-the-art support system, contemporary curriculum and a dedicated faculty provide an enabling environment for quality teaching, learning and research.

The institute recognizes the significance of Institute-industry Interface and promotes interaction with the industry through student placements, consultancy services, joint research projects and jointly organizing workshops, seminars, conferences, etc.

Presently, NITK offers undergraduate (B. Tech.) as well as post graduate (M. Tech.) programs in Civil, Computer Science, Electrical, Electronics and Communication, Mechanical Engineering, Industrial Engineering and Management, Information Technology and Master of Business Administration (MBA) – Marketing, Finance, Human Resource Management, Information Technology along with programs in Engineering, Technology, Applied Sciences, and Humanities & Social Sciences at doctorate level. The institute also offers excellent facilities for advanced research in the emerging areas of science and technology [1].

Objectives

The aim of the present study is to identify the various bibliometric aspects of the research output of the faculty and researchers of National Institute of Technology, Kurukshetra. The specific objectives can be mentioned as under:

Author's Affiliation: Deputy Librarian, Kurukshetra University, Kurukshetra-136119, Haryanam India.

Reprint's Request: Sanjay Kumar Kaushik, Deputy Librarian, Kurukshetra University, Kurukshetra-136119, Haryana, India.
E-mail: kaush_s@rediffmail.com

Received on 24.03.2018, **Accepted on** 31.03.2018

- To know the authorship pattern.
- To identify the proportion of single versus multi authored publications.
- To identify the degree of collaboration.
- To analyse the trend in the average number of authors per paper.
- To analyse the year-wise growth pattern of publications.
- To know the most preferred journals.

Methodology

The study is conducted by attempting an advanced search on Scopus database. The search is restricted to National Institute of Technology, Kurukshetra and time period from 2008 to 2017. After importing the data, it was codified. To get results in tabular form, SPSS has also been used. The analysis facility of Scopus has also been utilized.

Results

The analysis of the results is being presented in tabular form along with description of the same under different sub-headings:

Year Wise Distribution

The total number of publications contributed by NITKduring the period of study is 2589. Highest number of publications (503) were contributed in 2016 followed by second highest (479) in 2017. The year 2008 fetched the least number of publications i.e. 95. Most importantly the rise in number of publications is significantly high setting the upside trend.

Table 1: Showing year-wise publications

Year	Number of publications
2017	479
2016	503
2015	374
2014	379
2013	176
2012	184
2011	168
2010	124
2009	107
2008	95
Total	2589

Authorship pattern

It is revealed from the results that the pattern of single authorship is not predominant as mere 128 publications out of 2589 are single authored. The majority of publications (54.04%) are either double authored or triple authored which is almost equal to KUK and MDU contributions [2]. As many as twelvepublications were contributed by involving ten and more authors. The average number of authors per publication is 3.43.

Table 2: Showing authorship-wise publications

Authorship	Number of Publications
Single	128
Double	712
Triple	687
Four	512
Five	292
Six	154
Seven	54
Eight	32
Nine	6
Ten and More	12
Total	2589

Degree of Collaboration

To measure the collaboration in research formula designed by K Subramanyam [3] is used. The formula is:

C = NM/ (NM+NS)

Where C is the degree of collaboration, NM is number of multi-authored contributions and NS is number of single-authored contributions. In other words it is the ratio of the number of multi-authored contributions to total contributions.

The degree of collaboration in the contributions under study is found to be 0.95 which support the results of Raja Ramanna Centre for Advanced Technology contributions [4]. The faculty of NITK also have foreign collaborations with more than forty countries. The top ten foreign collaborative countries have been listed in the below table along with the number of publications. The highest foreign collaboration is withUnited States. The second highest foreign collaborative country is Malaysia.

Subject-wise distributions of contributions

Obviously, the major area of research output of NITK is Engineering with 48.4% of publication. The second area is computer science with 40.13% publications. The areas like Energy; Physics and Astronomy; Materials Science; Mathematics; Chemistry; and Chemical Engineering are the other areas of publications. It is interesting to note that NITK has contributed even in the area of arts and humanities.

Table 3: Showing Country-wise collaboration

Country	No. of publications
United States	51
Malaysia	24
Japan	14
United Kingdom	14
Germany	10
Jordan	9
Australia	7
Brazil	7
South Korea	7
Czech Republic	6
Iran	6

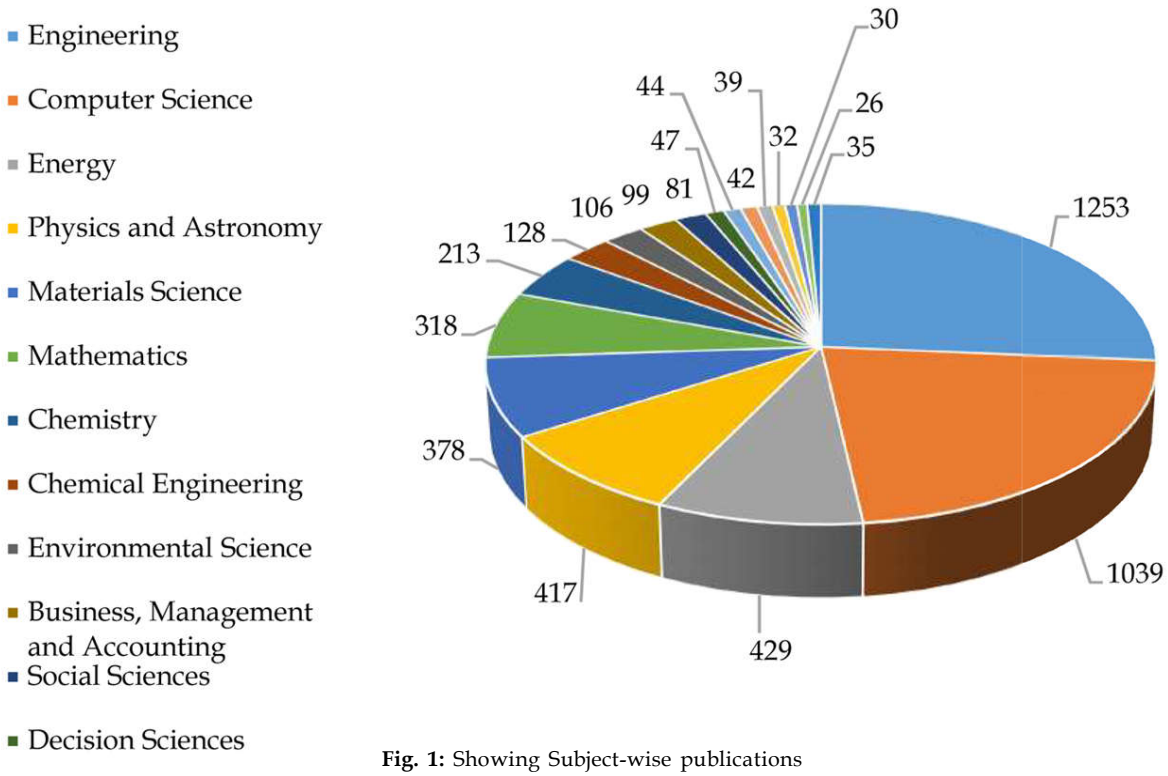


Fig. 1: Showing Subject-wise publications

Document type wise distribution of publications

An analysis of type of document of publications indicates that 53.88% contributions were published in the form of research articles and 41.01% as conference proceedings. Rest of the contributions were reviews, book chapters, editorial, letter, and short survey etc.

Table 4: Showing Document type-wise publications

Document Type	Number
Article	1395
Conference Paper	1062
Article in Press	48
Review	41
Book Chapter	27
Editorial	9
Others	7

Table 5: Showing Top Ten Source publication

Source Title	Number of Publications
Procedia Computer Science	50
Aip Conference Proceedings	34
Wireless Personal Communications	32
Communications In Computer And Information Science	30
Advances In Intelligent Systems And Computing	29
Applied Mechanics And Materials	25
Lecture Notes In Computer Science Including Subseries Lecture Notes In Artificial Intelligence And Lecture Notes In Bioinformatics	19
Superlattices And Microstructures	18
Indian Journal Of Pure And Applied Physics	17
International Journal Of Electrical Power And Energy Systems	17
Journal Of Materials Science Materials In Electronics	16

Preferred Journals

The publications of NITK were published in various journals. To observe the preferred or popular journal, the list of source titles was analysed. There is no single journal which has attracted more than even two percent of total contributions. However, the highest number of publications (50) are published in Procedia Computer Science and 34 inAIP Conference Proceedings.

Wireless Personal Communications, Communications in Computer and Information Science, and Advances in Intelligent Systems and Computing published 32, 30 and 29 papers respectively.

Conclusions

The results clearly reflect that still the trend of multi-authorship prevails. Arora and Pawan [5] emphasized that increase in multi authorship and collaboration between researchers is an indication of growing professionalism in different fields. Hence it can be viewed that team research is predominant over solo research. As majority of the publications are in the form of articles, this highlights the academic and research interest of the faculty of NITK.

References

1. http://www.nitkkr.ac.in/
2. Kaushik, Sanjay Kumar. Research Contributions of KUK and MDU: A Bibliometric Study. Indian Journal of Library and Information Science. 2017;11(2);180-84.
3. Subramayam, K. Bibliometric study of research collaboration: A review. Journal of Information Science. 1982;6:33-38.
4. Rajendiran, P. Quantitative analysis of research publications of Raja Ramanna Centre for Advanced Technology, Indore: A bibliometric study from 1995-2004. IASLIC Bulletin. 2006;51(4):228-233.
5. Arora, J and Pawan, U. Collaborative research and authorship patterns in immunology: Correlation between multiple authorship and citedness. IASLIC Bulletin. 1995;40(2):73-83.

Original Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.2

Career Oriented Information: Analysis of Articles Published in Employment News during 2016-2017

Anil Kumar Dhiman[1], Sachin Kumar Kaushik[2]

Abstract

The choice of profession and making the career after college education or technical education is a tough job. It is but natural that there should be some guidelines or the articles which should guide the coming generation in choosing their profession. Employment News regularly publishes career related articles in its various issues for the aspirants. This paper attempts to analyze and present the trends of the professions prevalent in the present days for the aspirants in ascertaining their future.

Keywords: Employment News; Career; Career Related Information; Profession.

Introduction

Employment News is a newspaper that is published weekly on each Saturday by Ministry of Information and Broadcasting, Government of India. It was launched in 1976 with a view to provide information on employment opportunities to the unemployed and under employed youth of the country. It is published in three languages, as Employment News in English, and Rozgar Samachar in Hindi and Urdu languages. Its circulation is nearly 3 lakhs per week.

Employment News is providing information related to job vacancies, job oriented training programmes, admission notices related to job oriented exams and results of recruitment exams in respect of: ministries/ departments/offices/organizations/autonomous bodies/societies/PSUs of the central government, state government and UT Administrations; nationalized banks/RRBs /UPSC/SSC/constitutional and statutory bodies; and central/state governments universities/ colleges/institutes recognized by the UGC/AICTE.

It also provides editorial contents on socio-economic issues and career guidance that helps youth in broadening their horizons. Thus, the newspaper is serving as a guide to the youth, especially those in rural areas, by helping them to gain an understanding of job market so that the young people could make an informed decision about their careers (http://employmentnews. gov.in/newemp/ AboutUs.aspx).

Earlier Studies

A careful analysis of the previous studies reveals that a plenty of researches have been carried out in the field of bibliometrics, for example, by Dhiman (2000) on bibliometry of Ethnobotany journal; by Sinha and Dhiman (2001) on the research articles published in Indian and Foreign journals by Dr. R.C. Sinha; by Dhiman and Rani (2005) on bibliometric study of Journal of Indian Botanical Society, 1997-2001 and Dhiman (2015) on ethnobotanical literature. But it is observed that only a few studies have been carried out highlighting the bibliometric analysis of employment related fields.

Jeevan (2003) has analyzed the printed weekly issues of 'Employment News' from the year 1998-2001 to assess the job opportunities in the library

Author's Affiliation: [1]Information Scientist, Gurukul Kangri University, Haridwar, Uttarakhand 249404, India. [2]Research Scholar (LIS), Himalayan University, Itanagar, Arunachal Pradesh 791111, India.

Reprint's Request: Anil Kumar Dhiman, Information Scientist, Gurukul Kangri University, Haridwar, Uttarakhand 249404, India.
E-mail: akvishvakarma@rediffmail.com

Received on 24.03.2018, **Accepted on** 02.04.2018

and information science profession. He has studied the major employers - the central/state governments and/or its allied institutions and the private sector; nature of job whether it is permanent, deputation or temporary; reservation trends; state in which the job is advertised; essential (academic as well as professional) and desirable qualifications; prior experience; and the prominent employers and categories of jobs. The results of the study reflect the significant trends from a major stream for professional employment, the central government and its autonomous and research institutions.

Sinha and Pandey (2014) also have conducted a study on the status of job opportunities and employment for library and information science professionals in India by analyzing the data collected from the print version of Employment News and the LIS Job Portals, mainly the LIS Link available on http://www.lislinks.com for the year 2011. The study suggest that more posts for teaching positions should be created so that fresh NET and Ph.D. degree holders may get job for teaching or research. It is also observed that the number of vacancies for JRF/SRF have not been published during the year 2011 so more number of projects should be given to universities to engage fresh JRF/SRF/RA for research in the area of library and information science.

Methodology

Fifty three issues from 30 July – 5 August 2016 to 29 July–4 August 2017 of print version of Employment News were scanned for analyzing career oriented information published in these issues. It is seen that all issues publishes career oriented articles but some of them are related to the preparation of examinations etc. and rest pertains to purely career oriented information.

Thus, the various issues of Employment News were scanned for following objectives:

- To know the frequency of career oriented articles published in Employment News.
- To know the subject field of career oriented articles published in Employment News.
- To know the authorship pattern of the authors contributing career oriented articles in Employment News.
- To know the popular authors contributing career oriented articles in Employment News.
- To know the male – female ratio of the authors contributing career oriented articles in Employment News.

Data Tabulation and Analysis

Data were collected from the issues of Employment News for the duration of 30 July – 5 August 2016 to 29 July – 4 August 2017. Out of total 53 articles published, 32 articles pertaining purely to career oriented articles, were selected, tabulated and analyzed from different angles to verify the objectives framed in methodology for this study.

Career Oriented Articles versus Other Articles

Table 1 depicts that total 53 articles were published for career related information in various issues of Employment News during 2016-2017. It is also clear that 32 articles which constitute to 60.375% among the total contribution were directly related to career oriented information while rest were related to allied fields like the preparation of civil

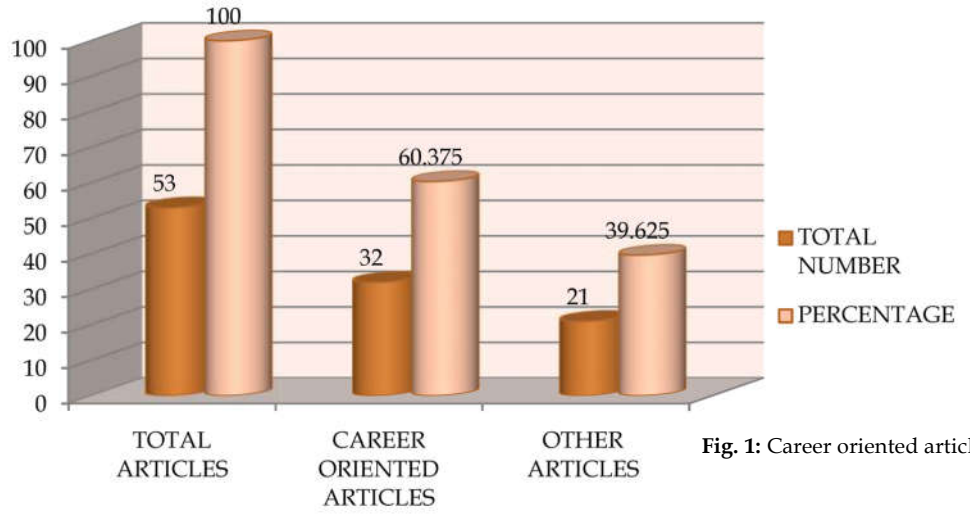


Fig. 1: Career oriented articles versus other articles

Table 1: Career Oriented Articles versus Other Articles

S.N.	Total Articles	Career Oriented Articles	Percentage of Career Oriented Articles	Other Articles	Percentage of Other Articles
1.	53	32	60.375%	-	-
2.	53	-	-	21	39.625%

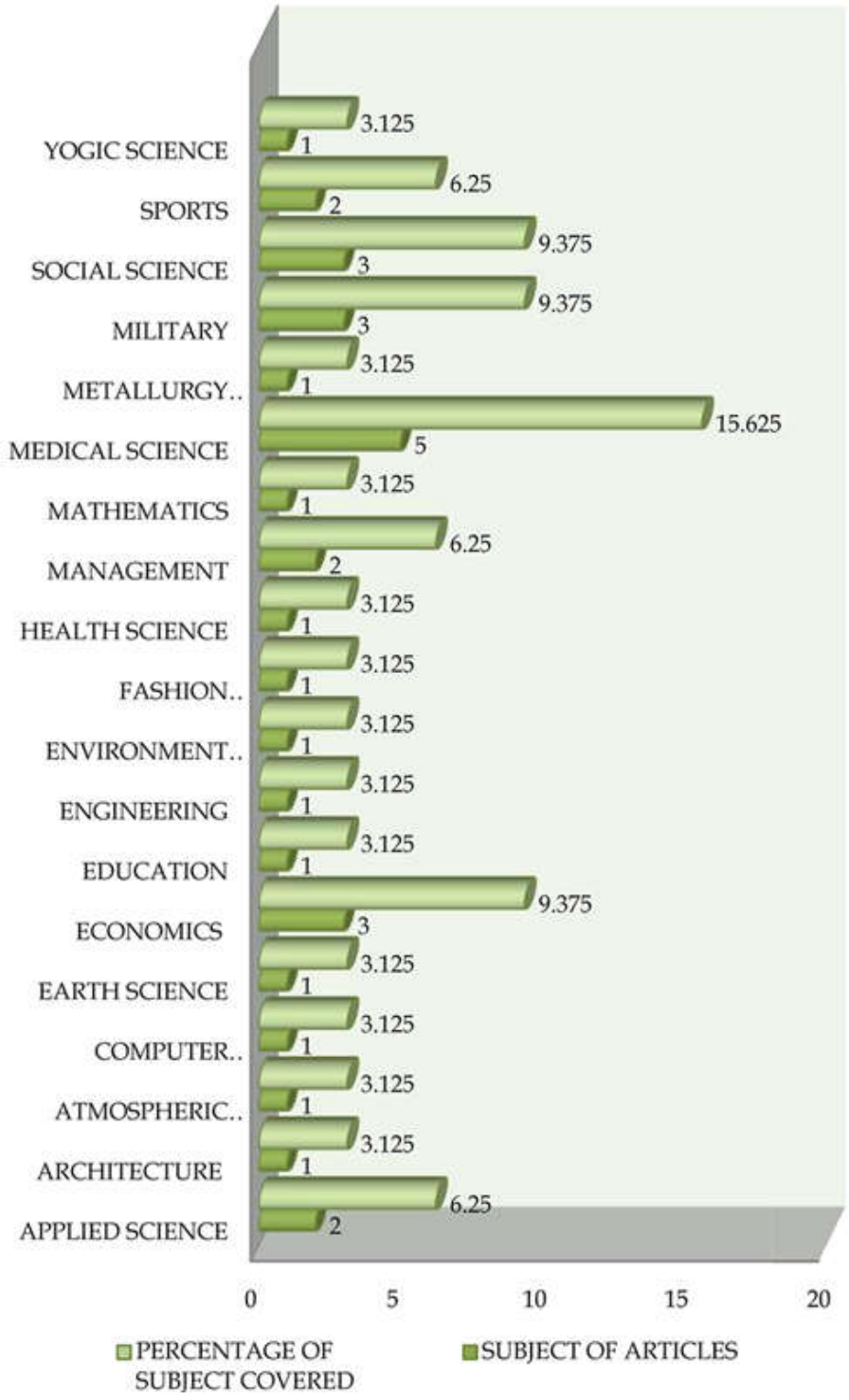


Fig. 2: Subject of the Career Oriented Articles

Table 2: Subject of the Career Oriented Articles

S. N.	Career Oriented Articles	Subject of Articles	Total Number of Articles in a Subject	Percentage of Subject Covered
1.	Food Processing	Applied Science	2	6.25%
2.	Printing Technology	Applied Science		
3.	Architecture	Architecture	1	3.125%
4.	Meteorology	Atmospheric Science	1	3.125%
5.	Cloud Computing	Computer Science	1	3.125%
6.	Polar Science	Earth Science	1	3.125%
7.	Auditor	Economics	3	9.375%
8.	Public Sector Bank	Economics		
9.	Taxation	Economics		
10.	Online Teaching	Education	1	3.125%
11.	Genetic Engineering	Engineering	1	3.125%
12.	Environment Impact Assessment	Environment Science	1	3.125%
13.	Fashion Communication	Fashion Technology	1	3.125%
14.	Sanitation	Health Science	1	3.125%
15.	Digital Marketing	Management	2	6.25%
16.	Logistic Management	Management		
17.	Statistics	Mathematics	1	3.125%
18.	Bioinformatrics	Medical Science	5	15.625%
19.	Medical Tourism	Medical Science		
20.	Nursing	Medical Science		
21.	Ophthalmology	Medical Science		
22.	Radiology	Medical Science		
23.	Mining	Metallurgy Science	1	3.125%
24.	Defense Service	Military	3	9.375%
25.	Indian Air force	Military		
26.	Indian Navy	Military		
27.	Disability Rehabilitation	Social Science	3	9.375%
28.	Disaster Management	Social Science		
29.	Social Work	Social Science		
30.	Cricket	Sports	2	6.25%
31.	Sports Commentator	Sports		
32.	Yoga	Yogic Science	1	3.125%

service examinations, option for further study after 10^{th} and 12^{th} classes etc. Figure 1 also depicts the details of career oriented versus other articles more clearly.

Subject of the Career Oriented Articles

As far as the subjects of career oriented articles are concerned, almost it is seen that every time articles related to different fields are published. However, when they are categorized within the broad subjects, 5 articles were found to be related to Medical Science, followed by 03 articles each by Economics, Military and Social Science and 02 each by Applied Science, Management and Sports.

Thus, medical science forms majority with 15.625% among the total articles published in Employment News during the period of study, followed by 9.375% for Economics, Military and Social Science; and 6.25% each for Applied Science, Management and Sports.

Rest of them belong to single subject field, such as the Architecture, Computer Science, Earth Science, Engineering, Environment Science, Fashion Technology, Health Science, Mathematics, Metallurgy Science and Yogic Science. Thus, 19 subjects are covered in 32 issues of Employment News for career oriented information. Figure 2 also depicts the details of the subjects covered by Employment News.

Authorship Pattern (Single versus Joint Authorship)

Authorship pattern is shown in Table 3. It may be seen from the table that out of 32 articles, 17 contributions are from single authorship and rest 15 are contributed in joint authorship.

Thus, majority of the articles are solo author contribution; however, a trend of joint authorship is also emerging which can be said a good trend, as collaborative subjects' studies are emerging in the education arena and various profession are developing with combination of two or more subject areas, for example medical tourism. The ratio of single versus joint authorship is also shown through Figure 3.

Table 3: Single versus Joint Authorship

S.N.	Total Articles	Single Author	Percentage of Single Author	Joint Author	Percentage of Joint Author
1.	32	17	53.125 %	-	-
2.	32	-	-	15	46.875 %

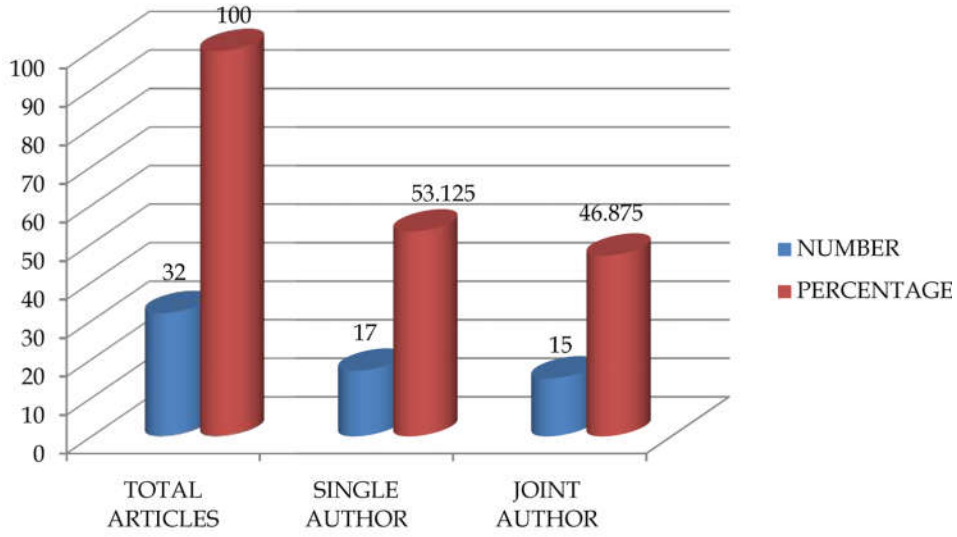


Fig. 3: Single versus Joint Authorship

Most Popular Authors

Table 4 tells about the most prolific authors who have contributed career related articles in various issues of Employment News. But first author is taken into consideration for ascertaining most popular authors. It is clearly seen that Albuquerque, U. is the most prolific writer who has contributed 14 articles, followed by 03 articles by Mishra, Pratibha and 02 each by Bharti, Pawan Kumar; Sharma, Shreeprakash and Shrimali, Ruchi. They form 43.75%, 9.37% and 6.25% respectively among the total articles.

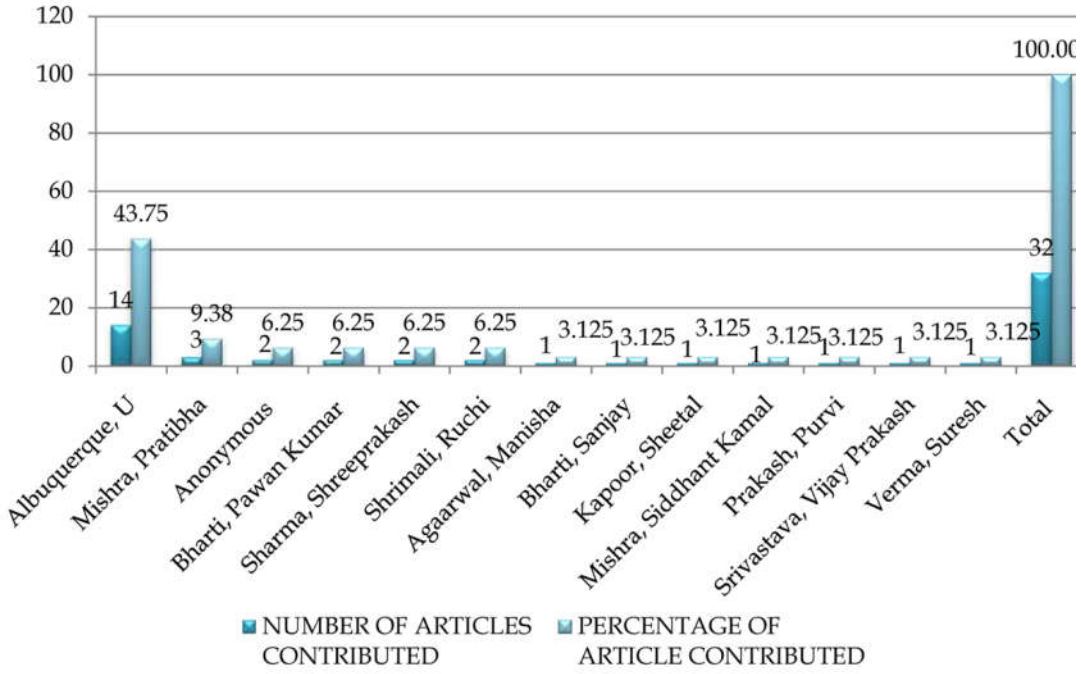


Fig. 4: Most popular authors

Table 4: Most Popular Authors

S.N.	Name of Author	Number of Articles Contributed	Percentage of Articles Contributed
1.	Albuquerque, U	14	43.75 %
2.	Mishra, Pratibha	3	9.38 %
3.	Anonymous	2	6.25 %
4.	Bharti, Pawan Kumar	2	6.25 %
5.	Sharma, Shreeprakash	2	6.25 %
6.	Shrimali, Ruchi	2	6.25 %
7.	Agaarwal, Manisha	1	3.125 %
8.	Bharti, Sanjay	1	3.125 %
9.	Kapoor, Sheetal	1	3.125%
10.	Mishra, Siddhant Kamal	1	3.125 %
1	Prakash, Purvi	1	3.125 %
12.	Srivastava, Vijay Prakash	1	3.125 %
13.	Verma, Suresh	1	3.125 %
	Total	32	100.00%

Rest 07 authors have contributed 01 article each in various issues of Employment News. It is noteworthy to mention that 02 articles are contributed by corporate authors. Most popular authors are also shown in Figure 4 graphically.

Male – Female Authorship

Table 5 clearly reveals that total 32 contributions are made by 12 authors and 02 by anonymous (authored by corporate bodies). Male authors are only 06 which have contributed 08 articles while the same number of authors, i.e. 06 are the females who have contributed 22 articles in the various issues of Employment News.

Male – female authorship is based on the first author only. It may be seen that there is maximum contribution from female authors which is 14 that constitute 43.75% among the total contribution. However, maximum contribution from male authors is only 6.25% that is contributed by only two male authors.

Anonymous authorship is included with the male author for the convenience of presentation. Figure 5

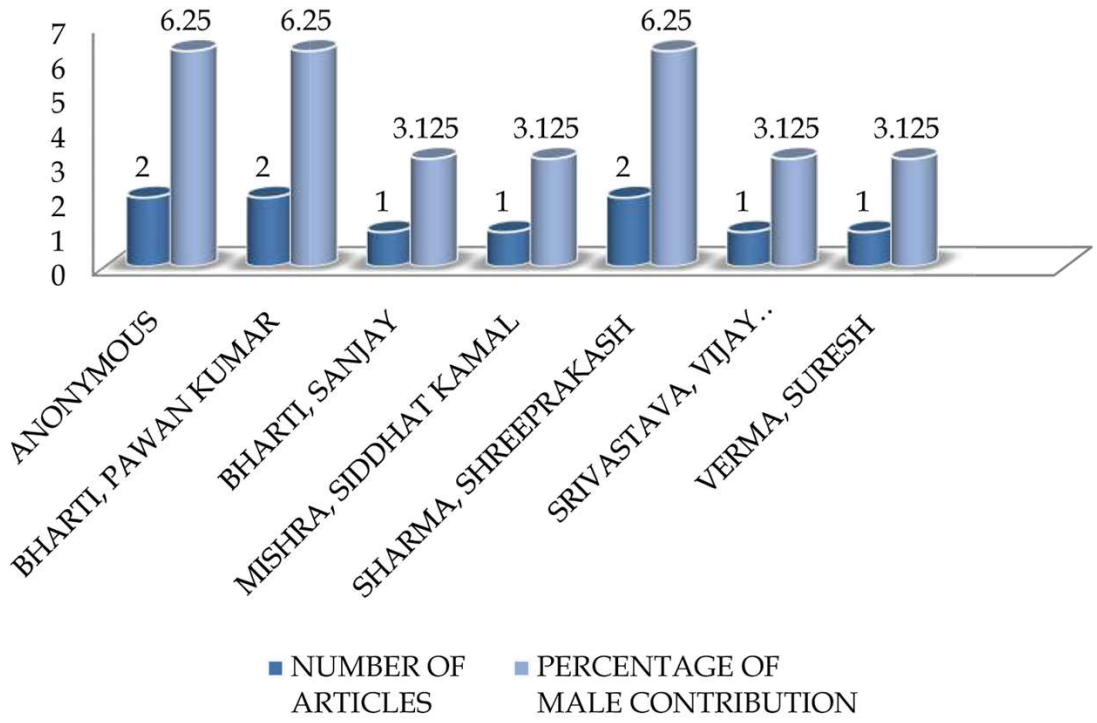


Fig. 5: Male Authorship

Table 5: Male – Female Authorship

S.N.	Male	No. of Articles	Percentage of Male Contribution	Female	No. of Articles	Percentage of Female Contribution
1.	Anonymous	2	6.25 %	Agaarwal, Manisha	1	3.125 %
2.	Bharti, Pawan Kumar	2	6.25 %	Albuquerque, U	14	43.75 %
3.	Bharti, Sanjay	1	3.125 %	Kapoor, Sheetal	1	3.125 %
4.	Mishra, Siddhant Kamal	1	3.125 %	Mishra, Pratibha	3	9.375 %
5.	Sharma, Shreeprakash	2	6.25 %	Prakash, Purvi	1	3.125 %
6.	Srivastava, Vijay Prakash	1	3.125 %	Shrimali, Ruchi	2	6.25 %
7.	Verma, Suresh	1	3.125 %			

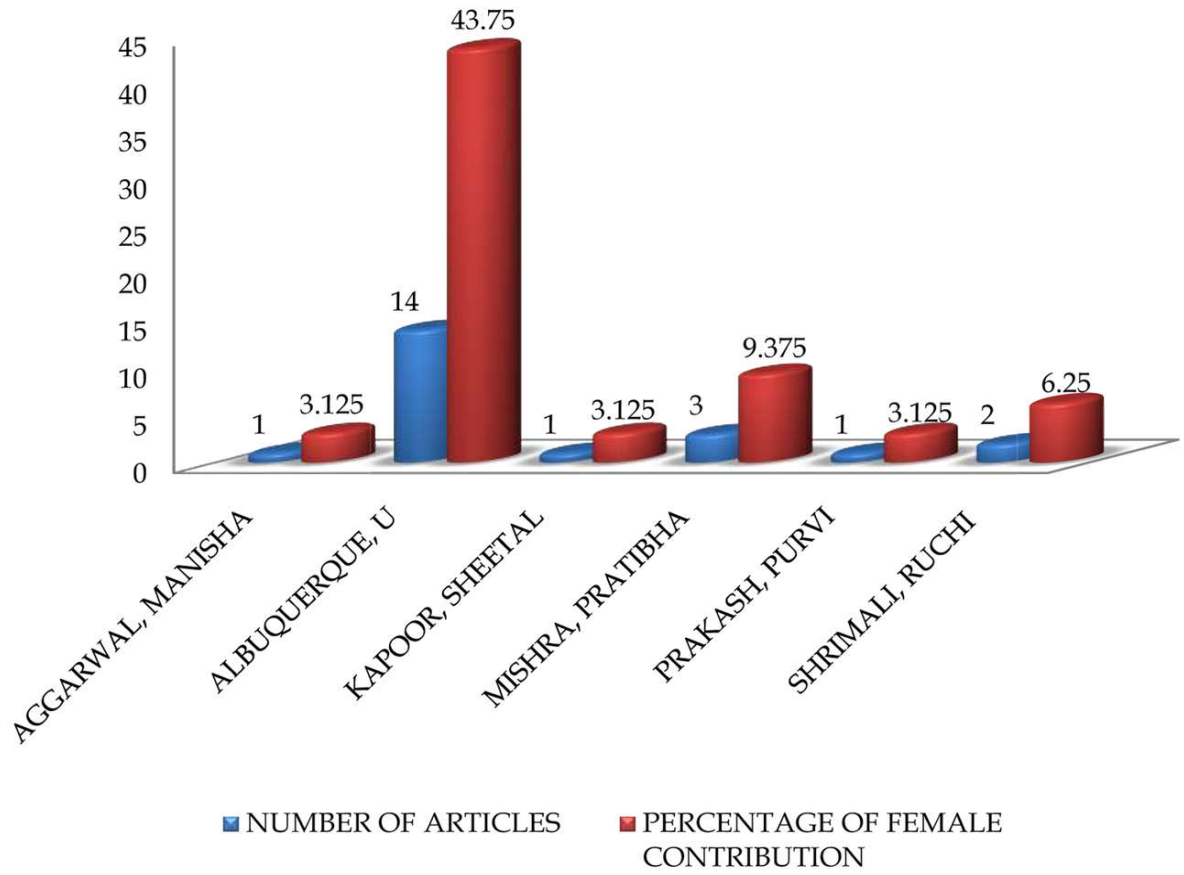


Fig. 6: Female Authorship

and 6 also show the details of the male and female authors more clearly.

Major Findings

On the basis of the data tabulated and analyzed, it may be concluded that:

- Solo authorship is prevalent though joint collaboration is also emerging to describe new emerging collaborated subjects/profession. Further, female authors dominate over male authorship as out of total 32, 22 articles are contributed by them.
- Albuquerque, U. is the most prolific author as out of 32 contributions, 14 are to her credit. It is followed by 02 articles each by Mishra, Pratibha with and Prakash, Purvi. Both three are happened to be female authors. Thus, it is very clear that female authors are dominating.

- 19 Subjects are covered in various issues of Employment News undertaken for study. However, more subjects need to be incorporated in future.
- One thing is noted that in earlier issues of the Employment News, no credits was given for the photographs included in the articles, but in recent issues, they have started crediting the photographs included in the articles.

Conclusion

The findings of various issues of Employment News indicate that though various topics have been covered in different issues of Employment News, but more subjects should be included in future so that coming generation may get be benefitted from the articles to ascertain their jobs and profession.

However, more of such studies on the data gathered from national and regional newspapers and job portals are required to verify the results of this study and to assess the true picture of employment trends in the coming time.

References

1. Dhiman, A.K. Ethnobotany Journal: A Ten Year Bibliometric Study. IASLIC Bulletin. 2000;45(4): 177-82.
2. Dhiman, A.K. Bibliometric Studies in Ethnobotany. SSDN Publishers & Distributors, New Delhi. 2015.
3. Dhiman, A.K. and Rani, Yashoda. Indian Botanist's Contribution: A Bibliometric Study Based on Journal of Indian Botanical Society, 1997-2001. Indian Journal of Information, Library & Society. 2005;18(3-4): 108-15.
4. Jeevan, V.K.J. Job Prospects in Library and Information Science: A Study of Vacancies notified in the 'Employment News' from 1998 to 2001. Annals of Library and Information Studies. 2003;50:62-84.
5. Sinha, Manoj Kumar and Pandey, Brojesh Kumar. Status of Job Opportunities and Employment of Library and Information Science Professionals in India: An Analysis of Job Advertisements. IOSR Journal of Humanities and Social Science (IOSR-JHSS). 2014;19(1):79-93.
6. Sinha, S.C. and Dhiman, A.K. A Bibliometric Study of Dr. R.C. Sinha, A Plant Pathologist. Annals of Library and Information Studies. 2001;48(2):73-84.

Original Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.3

A Study of the Uses and Advantages of E-Resources Compared to Print Resources in the State Universities in Kerala

C. Baskaran[1], Binu P.C.[2]

Abstract

Electronic information resources in libraries have made remarkable change in the users' perception towards print resources. A survey among 421 respondents in six state universities in Kerala reveals that the use of e-resources is considered as an advantage and it benefits the academic community. While analyzing the use of e-resources compared to the print resources, the statement *'E-resources affect the reading habit so it is not be encouraged'* is rejected because it is not an advantage. All the twelve hypothesizes set for 'Benefits of electronic resources for accessing scholarly information' are accepted because all the regulatory constructs have significant influence on Benefit of e-resources.

Keywords: Academic Libraries; Electronic Resources; Information and Communication Technolgy (ICT).

Introduction

The principal part of education and research is 'Access to Information'. The situations of the world have been changed by the development in information and communication technologies. Technological advancements had a great deal of effect on library and information services. Earlier the library collections were just in the conventional bound volumes, yet now it has changed from print to electronic. Most of the libraries offer information both in print and electronic configuration to its users. Now, electronic resources have turned out to be imperative piece of the learning process. With the advent innovative technologies, electronic resources are effortlessly and promptly accessible to users. The present study was conducted among the post graduate students, research scholars and faculty members of six state universities in Kerala. It examines the use and advantages of e-resources compared to print resources.

Author's Affiliation: [1]Librarian and Research supervisor, Alagappa University, Karaikudi, Tamil Nadu 630003, India. [2]Librarian, St. Paul's College, Kalamassery, Kerala 683503, India.

Reprint's Request: Binu P.C., Librarian, St.Paul's College, Kalamassery, Kerala 683503, India.
E-mail: cbklis@gmail.com

Received on 19.01.2018, **Accepted on** 09.02.2018

In the fast growing information explosion, information retrieval process has become very difficult without wasting time. Recent advances in the field of Information technology contribute considerably to enhance the services of libraries. Now electronic resources have become important ingredient of any academic and research libraries. E-resources are usually referred to as databases, books, journals, newspapers, magazines, archives, theses, conference papers, examination papers, government papers, research reports, scripts and monographs in an electronic form. The concept of 'Library without walls' has much significance when we discuss about electronic resources. The ready availability of thousands of electronic databases demanded the proper management of these resources. Thus it results in better usage of these resources and quality improvement in higher education.

The management of electronic resources is being a new momentum in academic and research libraries with the rapid and tremendous growth in electronic publishing. Due to the shrinking library budgets and increasing cost of information resources, libraries require an effective control over the subscription of electronic resources. It involves selection of electronic resources, evaluating the usage and making decisions to which subscriptions are to be continued. Electronic resources management as a system, it affects the library activities concerned with budgeting, collection development, acquisition, IT

infrastructure, licensing and the user training. Conscious efforts and continual investment is required in electronic resources management.

Review of Literature

Review of related literature is necessary to empower the researcher to get an unmistakable understanding about the particular field of study. It helps the researcher to have an understanding into the tested methods, procedures and interpretations of similar studies conducted somewhere else. Some prominent studies related to e-resources are reviewed.

Baskaran [1] has revealed that the members and research scholars accessing e-journals from UGC-INFONET consortium. A survey was conducted to find out the information usage patterns and needs of the research scholars and faculty members in Alagappa University. This study reveals that, on weekly basis 44% of the faculty members have access to e-journals, 85.99% of the faculty members and research scholars were aware about UGC-INFFONET and 17% of the respondents are not aware of this programme.

Baskaran & Kishorekumar [2] have analyzed t the awareness about the scholarly journals by the faculty members, available through UGC-INFONET. The study examines various pattern of use by the Professors and Associate Professors. As per the study Asst. Professors use the resources for study purposes and the faculty members have learned about UGC INFONET through the Library staff and from the senior faculty members. It is however found that lack of training became an obstacle in proper and full utilization of them.

Kalbande Dattatraya & Ingle [3] have discussed Use of e- resources, its impact, and the places from which the users are accessing these resources. A survey among 108 faculty members was conducted at the Mahatma Phule Agricultural University, Rahuri (M.S). The result showed that the awareness about e-resources encourages users to use these resources at maximum. Users are accessing these resources from the department and home. The impact of e-resources was noticeable from the decrease in number of print resources in comparison to the increase in e-resources [4].

Pramanathan & Baskaran [4] assess the use of electronic information resources among the research scholars at the Bharathidasan University, Tiruchirappalli. The study is based only on the research scholars of Arts, Science, Social Science, Management and Education faculties in Bharathidasan University, Tiruchirappalli. revealed that UGC-INFONET Digital Library consortium is providing 7500 plus Journals, Bibliographic Databases and Open Access Journals. The study analyses the use of UGC-INFONET resources by the Science scholars in Bharathidasan University. Questionnaires were distributed to Science scholars of the Bharathidasan University to collect data regarding the use of UGC-INFONET resources. This study helped to assess the impact of UGC-INFONET on university users and also this study will help for the improvements to be made in the existing UGC-INFONET e-journals consortium project.

Nazir Tawfeek & Zahid Ashraf [5] have surveyed Library consortiums will be a solution to this problem in India. But library consortia are still in their infancy stage in our country. UGC-INFONET library consortium has provided access to various E-resources to Indian Universities became much beneficial to higher education in India. This article examines the usage of these e-resources under UGC-INFONETdigital library consortia.

Katabalwa Anajoyce Samuel & Anajoyce Samuel Katabalwa [6] have analysed The use of electronic resource by the postgraduate students in the School of Education at the University of Dar es Salaam. The study showed that most of the students are using e-resources for many purposes. The major difficulties faced in the use of electronic resources are power failure, inadequate bandwidth, slow speed, inability to access the resources from home, lack of training, lack of awareness, limited access to computers and difficulty in searching. Finally, the recommendations for improving the use of electronic journal resources are provided.

Pal Jiban [7] has examined Prevalent situations that have been leading to resource sharing; primarily emanated from library cooperatives, interlibrary loan, buying clubs; subsequently changed to utility services, site licensing, and ultimately the Consortium – an emerging toolkit for libraries to survive. The strategic alliances amongst libraries and growth of library consortia have been discussed. The implications of different consortia models to the Indian libraries are explained; which suggests for a sustainable consortia organization among potential partners.

Bhat Nazir & Shabir Ahmed Gnain [8] have studied The satisfaction level of users with regard to the following types of Electronic Information Resources (EIRs) relevant to agriculture and allied disciplines, viz. Indexing and Abstracting (I&A) Databases; e-Journals; e-Books; and e-Theses. Seven universities

were surveyed using a questionnaire for collecting data. Wijetunge & Pradeepa [9] have analyzed 99 librarians working in the Sri Lankan public universities. Findings revealed that 65% frequently use open access material for their research, and the majorities (33%) use them for their research, 60% believed that the available e-resources fulfilled their needs. Inability to access the databases from home, absence of some full text articles, lack of relevant material and lack of access to archival material were identified as common barriers to use the e-resources.

Objectives of the Study

- To assess the use of electronic resources compared to the print resources.
- To examine the level at which e-resources are beneficial to the academic community.
- To study e-resource use pattern by the users.
- To evaluate the benefits of electronic resources for accessing scholarly information.

Methodology

The study was made by the researcher based on distributed the questionnaire among the users in Six State universities in Kerala. A questionnaire-based survey was conducted among the Post Graduate students, Research Scholars and Teachers from six state universities in the Kerala state. 421 respondents from Cochin University of Science and Technology (CUSAT), University of Calicut, Mahatma Gandhi University, University of Kerala, Sree Sankaracharya University of Sanskrit and Kannur University participated in the survey. The survey was conducted by systematic sampling procedure. The data collected were analyzed via SPSS 20.0 for Windows. Main objective of the study is to assess the uses and advantages of e-resources compared to print resources in the state universities in Kerala.

Data Analysis

Data analysis is the most important step in research process. It is the link between raw data and significant results leading to conclusions. This process of analysis has to be result oriented.

Gender Wise Distribution of Respondents

A study of data in table-1 shows the gender wise distribution of the respondents. It could be noted that out of the total 421 respondents were participated. Out of them, majority of the respondents 246 (58.4%) belong to the female group and the rest of them 175 (41.6%) are males.

Age Wise Distribution of Respondents

A study of data in Table 2 indicates that the majority of the respondents 272 (64.6%) are in the 21 to 30 age group. It is followed by, 96 (22.8%) in the 31 to 40 age group, 36 (8.6%) are in 41 to 50 age group and 10 (2.4%) respondents are in the age group above 50. It is also showed that 7 (1.7%) of the respondents belongs to the age group below 20.

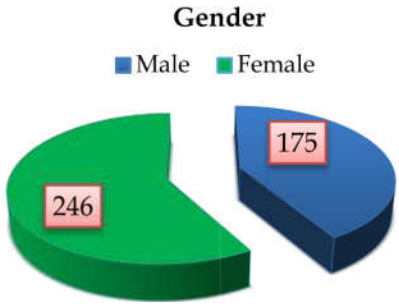


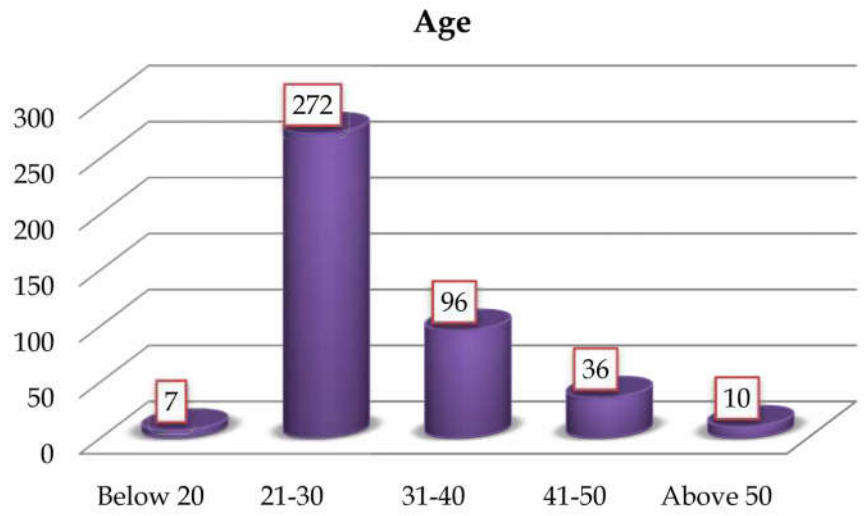
Table 1: Gender wise distribution of the respondents

Gender	Frequency	Percent
Male	175	41.6
Female	246	58.4
Total	421	100

Table 2: Age wise distribution of respondents

Age group	Frequency	Percent
Below 20	7	1.7
21-30	272	64.6
31-40	96	22.8
41-50	36	8.6
Above 50	10	2.4

Graph 2:



Educational qualification of the respondents

It is identified from the Table 3, majority of the respondents 109 (25.9%) of them are Post Graduate and 75 (17.8%) are having PG with NET qualification. It is followed by 61 (14.5%) respondents with M. Phil and 54 (12.8%) having M. Phil with NET qualification. Among the total respondents 44 (10.5%) are qualified Ph.D and 32 (7.6%) have Ph.D with NET. 46 (10.9%) are Under Graduate.

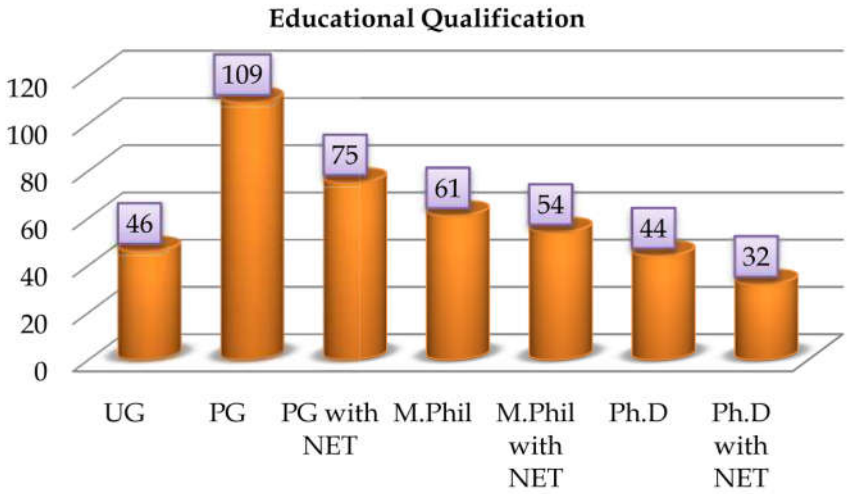
Table 3: Educational qualification of the respondents

Educational qualification	Frequency	Percent
UG	46	10.9
PG	109	25.9
PG with NET	75	17.8
M.Phil	61	14.5
M.Phil with NET	54	12.8
Ph.D	44	10.5
Ph.D with NET	32	7.6

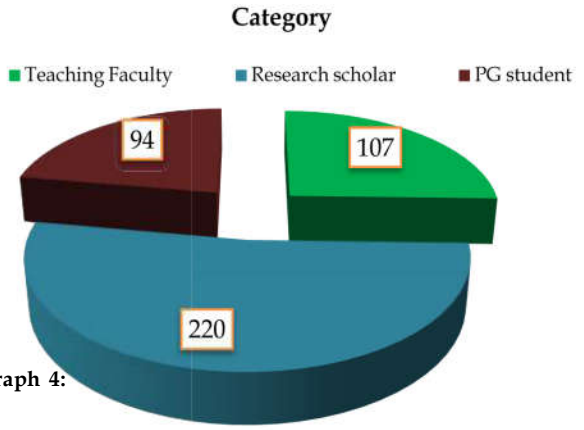
Table 4: Distribution of respondents by category

Category	Frequency	Percent
Teaching faculty	107	25.4
Research scholar	220	52.3
PG student	94	22.3

Graph 3:



Graph 4:



Distribution of Respondents by Category

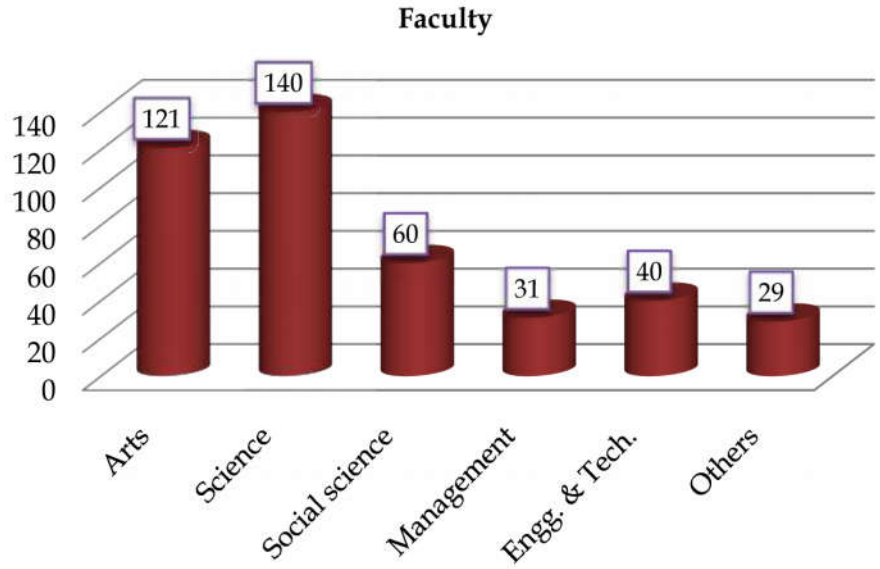
A study of data in table-4 indicates the category wise distribution of respondents. It could be noted that out of the total 421 respondents, 220 (52.3%) of them belong to the Research scholar category and 107 (25.4%) of them come under the Teaching faculty.

In this study, 94 (22.3%) of the respondents are found in the PG student. It is concluded that more than a half of the respondents belong to the Research scholar category.

Table 5: Faculty wise distribution of respondents

Faculty	Frequency	Percent
Arts	121	28.7
Science	140	33.3
Social science	60	14.3
Management	31	7.4
Engg. & Tech.	40	9.5
Others	29	6.9

Graph 5:



Faculty wise distribution of the respondents

A study of data in Table 5 describes the faculty wise distribution of the respondents. It could be seen that out of the total 421 respondents, 140 (33.3%) are belonging to faculty of science. It is clearly understood that 121 (28.7%) are coming under faculty of Arts, 60 (14.3%) of them belongs to Social Science, 40 (9.5%) are from Engineering and Technology, 31 (7.4%) are from Management and 29 (6.9%) are belonging to other faculty. It is concluded that majority of respondents are from science faculty.

University wise distribution of respondents

Data presented in Table 6 represents the University wise distribution of the respondents. Out of 421 respondents 112 (26.6%) belong to Cochin University of Science And Technology (CUSAT).

It is followed by 75 (17.8%) from University of Calicut, 69 (16.4%) from Mahatma Gandhi University, 60 (14.3%) from University of Kerala, 53 (12.6%) from Sree Sankaracharya University of Sanskrit and 52 (12.4%) are from Kannur University.

Table 6: University wise distribution of respondents

Name of university	Frequency	Percent
SSUS KALADY	53	12.6
CUSAT	112	26.6
CALICUT	75	17.8
MGU	69	16.4
KERALA	60	14.3
KANNUR	52	12.4

Graph 6:

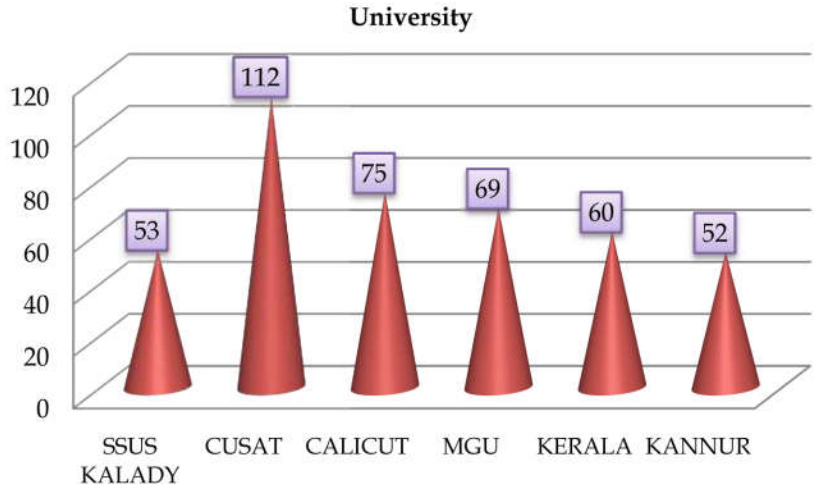


Table 7: Model fit Indices for Confirmatory factor analysis (CFA) -Advantages

	χ^2	DF	P	Normed χ2	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Advantages	18.126	12	.112	1.510	.989	.967	.988	.991	.996	.015	.035

Use of electronic resources compared to the print resources

The respondents are asked, how do you agree with the use of electronic resources compared to the print resources? As this being an opinion converted into a score the answer may be subjected to random variations and may be influenced by psychological factors. So it is better to use psychometric scale development approaches to evaluate the relationship. The best model for testing the convergent validity and for modeling the best method is Structural Equation Model (SEM) or Confirmatory Factor Analysis.

Structural equation modeling (SEM) is a statistical technique that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon. SEM conveys two important aspects of the procedures: a) causal process under study is represented by a series of structural (regression) equations, and b) these structural relationships can be modeled to facilitate a clearer conceptualization of the theory under study. The hypothesized model is statistically tested simultaneously to examine its consistency with the data through goodness of fit measures.

Confirmatory factor analysis (CFA) is a type of structural equation modeling (SEM), which deals specifically with measurement models that is relationship between observed measures or indicators (eg. Test items, test scores etc) and the latent variables or factors. A fundamental feature of CFA is its hypothesis–driven nature.

In CFA, the researcher specifies the number of factors and the pattern of indicator factor loading in advance, thus the researcher must have a firm prior sense, based on past evidence and theory of the factors that exist in the data.

In order to evaluate the advantages of the electronic resources compared to the print resources we use the Structural Equation Modeling (SEM) and test the hypothesis;

H_1: Save time of the user is an advantage

H_2: Get variety of information is an advantage.

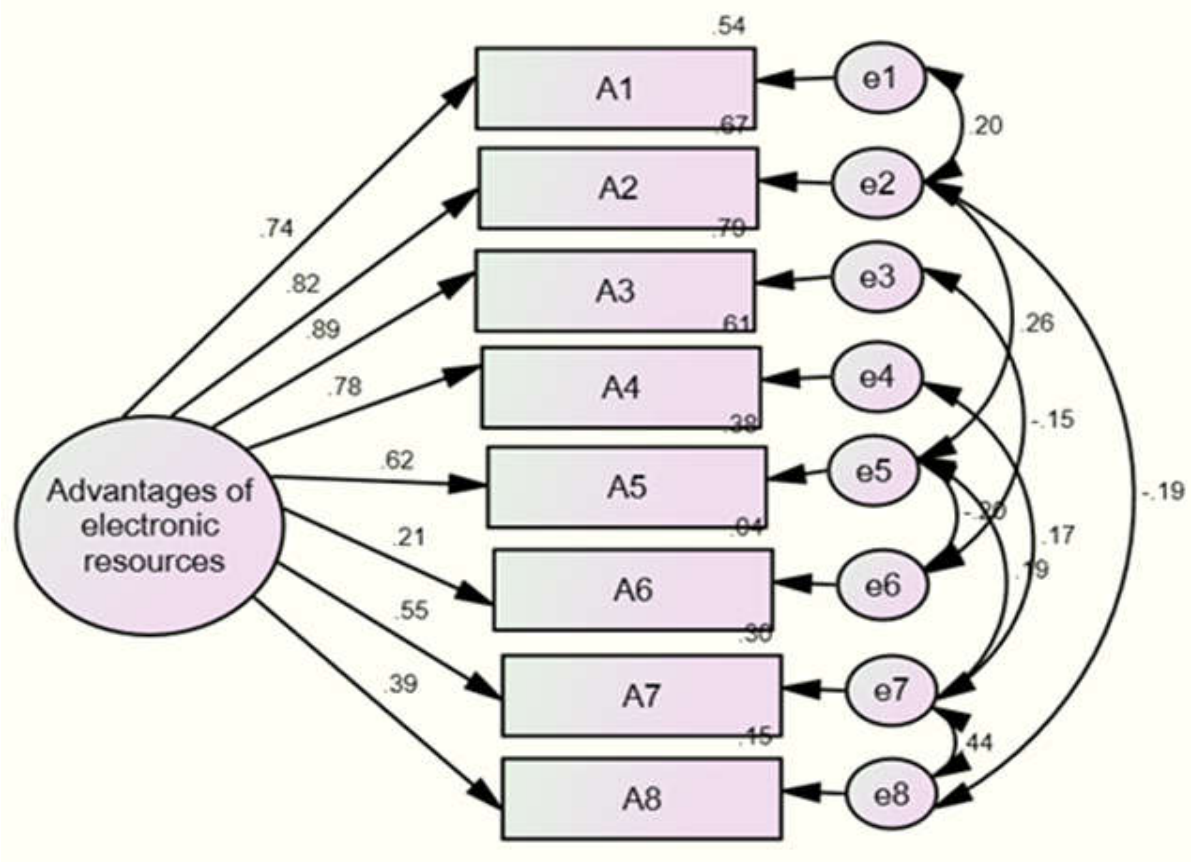
H_3: Get scholarly information is an advantage.

H_4: Better management of information is an advantage.

H_5: Get latest information is an advantage.

Table 8: The Regression Coefficient advantages

Path	Regression Coefficient	C.R.	P	Variance explained (%)	Rank
Save time of the user → Advantage	0.737	19.956	<0.001	54.4	4
Get variety of information → Advantage	0.818	24.329	<0.001	66.9	2
Get scholarly information →Advantage	0.888	29.861	<0.001	78.8	1
Better management of information → Advantage	0.779	22.048	<0.001	60.7	3
Get latest information →Advantage	0.620	15.328	<0.001	38.4	5
E-resources affect the reading habit → Advantage	0.211	4.529	<0.001	4.5	8
Fulfill the information needs →Advantage	0.552	13.135	<0.001	30.5	6
Any other uses→ Advantage	0.385	8.582	<0.001	14.8	7



H_6: E-resources affect the reading habit so it is not be encouraged is an advantage.

H_7: Fulfill the information need is an advantage.

H_8: Any other uses is an advantage

Model fit Indices for Confirmatory factor analysis (CFA) –Advantages

A study of results in table 7 indicates a reasonable fit model as all the values are above the standard limits.

The Regression Coefficients -Advantages

H_1: Save time of the user is an advantage

The results exhibited in Table 8 revealed that the regulatory construct, 'Save time of the user' had significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.737, which is more than 0.4 (also *p* value was significant). So the hypothesis H_1 is accepted and conclude that save time of the user is an advantage

H_2: Get variety of information is an advantage.

The results exhibited in Table 8 revealed that the regulatory construct Get variety of information had significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.818, which is more than 0.4 (also *p* value was significant). So the hypothesis $H_2$is accepted and concludes that Get variety of information is an advantage.

H_3: Get scholarly information is an advantage.

The results exhibited in Table 8 revealed that the regulatory construct Get scholarly information had significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.888, which is more than 0.4 (also *p* value was significant). So the hypothesis H_3 is accepted and conclude that Get scholarly information is an advantage.

H_4: Better management of information is an advantage.

The results exhibited in Table 8 revealed that the regulatory construct Better management of information had significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.779, which is more than 0.4 (also *p* value was significant). So the hypothesis H_4 is accepted and conclude that Better management of information is an advantage.

H_5: Get latest information is an advantage.

The results exhibited in Table 8 revealed that the regulatory construct Get latest information had significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.620, which is more than 0.4 (also *p* value was significant). So the hypothesis H_5 is accepted and concludes that Get latest information need is an advantage.

H_6: E-resources affect the reading habit so it is not be encouraged is an advantage.

The results exhibited in Table 8 revealed that the regulatory construct E-resources affect the reading habit had no significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.211, which is less than 0.4 (also *p* value was significant). So the hypothesis H_6 is rejected and conclude that E-resources affect the reading habit is not an advantage.

H_7: Fulfill the information need is an advantage.

The results exhibited in Table 8 revealed that the regulatory construct 'Fulfill the information' had significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.552, which is more than 0.4 (also *p* value was significant). So the hypothesis H_7 is accepted and conclude that fulfill the information needs is an advantage.

H_8: Any other uses is an advantage

The results exhibited in Table 8 revealed that the regulatory construct 'Any other uses' had no significant influence on advantage of e-resources as the standardized direct effect of this construct on advantage of e-resources was 0.385, which is less than 0.4 (also *p* value was significant). So the hypothesis H_8 is rejected and conclude that any other uses is not an advantage.

Benefits of electronic resources for accessing scholarly information

Here use the SEM to evaluate the benefits of electronic resources for accessing scholarly information. That is in this case using SEM we test the hypothesizes

Table 9: Model fit Indices for CFA-Benefits

	χ^2	DF	P	Normed χ^2	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Benefits of electronic resources	37.991	28	.099	1.357	.985	.957	.986	.991	.996	.012	.029

Table 10: The Regression Coefficients -Benefits

Path	Regression Coefficient	C.R.	P	Variance explained (%)	Rank
Information being available at anytime →Benefit	0.534	12.595	<0.001	51.9	4
Access from any location →Benefit	0.527	12.389	<0.001	28.5	11
Diversity of resources →Benefit	0.662	16.837	<0.001	27.8	12
User friendly →Benefit	0.760	21.062	<0.001	43.8	7
Forwarded to others easily →Benefit	0.664	16.913	<0.001	57.7	2
Downloading/Copying is very easy →Benefit	0.628	15.605	<0.001	44.1	6
Access to back issues is very easy →Benefit	0.835	25.464	<0.001	39.4	8
Multiple user access →Benefit	0.757	20.913	<0.001	69.7	1
Economical →Benefit	0.720	19.190	<0.002	57.3	3
Easily searchable →Benefit	0.579	13.974	<0.003	33.3	10
Links to related information →Benefit	0.707	18.630	<0.004	33.6	9
Any other Benefits/Usefulness→ Benefit	0.577	13.911	<0.005	50.0	5

H_1: Information being available at any time is a Benefit

H_2: Access from any location is a Benefit.

H_3: Diversity of resources is a Benefit.

H_4: User friendly is a Benefit.

H_5: Forwarded to others easily is a Benefit.

H_6: Downloading/Copying is very easy is a Benefit.

H_7: Access to back issues is very easy is a Benefit.

H_8: Multiple user access is a Benefit

H_9: Economical is a Benefit.

H_{10}: Easily searchable is a Benefit.

H_{11}: Links to related information is a Benefit.

H_{12}: Any other Benefits/Usefulness is a Benefit

Model fit Indices for CFA-Benefits

Table 10 indicates a reasonable fit model as all the values are above the standard limits.

The Regression Coefficients -Benefits

H_1: Information being available at any time is a Benefit

The results exhibited in Table 11 revealed that the regulatory construct Information being available at any time has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.534 which is more than 0.4 (also *p* value was significant). So the hypothesis $H_1$is accepted and conclude that Information being available at any time is a Benefit.

H_2: Access from any location is a Benefit.

It is revealed that the regulatory construct Access from any location has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.527which is more than 0.4 (also *p* value was significant). So the hypothesis H_2 is accepted and conclude that Access from any location is a Benefit.

H_3: Diversity of resources is a Benefit.

It is revealed that the regulatory construct Diversity of resources has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.662 which is more than 0.4 (also *p* value was significant). So the hypothesis H_3 is accepted and conclude that Diversity of resources is a Benefit.

H_4: User friendly is a Benefit.

It is revealed that the regulatory construct User friendly has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.760 which is more than 0.4 (also *p* value was significant). So the hypothesis H_4 is accepted and conclude that User friendly is a Benefit.

H_5: Forwarded to others easily is a Benefit.

It is revealed that the regulatory construct Forwarded to others easily has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.664 which is more than 0.4 (also *p* value was significant). So the hypothesis H_5 is accepted and conclude that Forwarded to others easily is a Benefit.

H_6: Downloading/Copying is very easy is a Benefit.

It is revealed that the regulatory construct Downloading/Copying is very easy has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.628 which is more than 0.4 (also *p* value was significant). So the hypothesis H_6 is accepted and conclude that Downloading/Copying is very easy is a Benefit.

H_7: Access to back issues is very easy is a Benefit.

It is revealed that the regulatory construct Access to back issues is very easy has significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.835 which is more than 0.4 (also *p* value was significant). So the hypothesis H_7 is accepted and conclude that Access to back issues is very easy is a Benefit.

H_8: Multiple user access is a Benefit

It is revealed that the regulatory construct Multiple user access had significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.757 which is more than 0.4 (also *p* value was significant). So the hypothesis H_8 is accepted and conclude that multiple user access is a Benefit.

H_9: Economical is a Benefit.

It is revealed that the regulatory construct Economical had significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.720 which is more than 0.4 (also *p* value was significant). So the hypothesis H_{10} is accepted and concludes that Economical is a Benefit.

H_{10}: Easily searchable is a Benefit.

It is revealed that the regulatory construct Easily searchable had significant influence on Benefit of e-

resources as the standardized direct effect of this construct on Benefit of e-resources was 0.579, which is more than 0.4 (also *p* value was significant). So the hypothesis H_{10} is accepted and conclude that easily searchable is a Benefit.

H_{11}: Links to related information is a Benefit.

It is revealed that the regulatory construct Links to related information had significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.707, which is more than 0.4 (also *p* value was significant). So the hypothesis H_{11} is accepted and concludes that Links to related information is a Benefit.

H_{12}: Access to back issues is very easy is a Benefit

It is revealed that the regulatory construct Any other Benefits/Usefulness had significant influence on Benefit of e-resources as the standardized direct effect of this construct on Benefit of e-resources was 0.577, which is more than 0.4 (also *p* value was significant). So the hypothesis H_{12} is accepted and concludes that any other Benefits/Usefulness is a Benefit.

Conclusion

The initiation of electronic resources has made significant impact on the usage of traditional print resources in libraries. While testing various hypothesizes under 'use of electronic resources compared to the print resources', it is found that two hypothesizes ie, H_6 & H_8 are rejected. The hypothesize H_6 is rejected and state that 'E-resources affect the reading habit so it is not be encouraged' is not an advantage. Similarly the regulatory construct 'Any other uses' had no significant influence on advantage of e-resources. All the twelve hypothesizes under 'Benefits of electronic resources for accessing scholarly information' are accepted because the regulatory constructs have significant influence on Benefit of e-resources. To conclude, E-resources have made significant impact and teaching learning process and research activities. The Study finds Majority of the respondents 246 (58.4%) belong to the female group and the rest of them 175 (41.6%) are males. Majority of the respondents 272 (64.6%) are in the 21 to 30 age group. majority of the respondents 109 (25.9%) of them are Post Graduate and 75 (17.8%) are having PG with NET qualification. 220 (52.3%) of them belong to the Research scholar category and 107 (25.4%) of them come under the Teaching faculty. 140 (33.3%) are belonging to faculty of science. It is clearly understood that 121 (28.7%) are coming under faculty of Arts, 60 (14.3%) of them belongs to Social Science, 40 (9.5%) are from Engineering and Technology. 112 (26.6%) belong to Cochin University of Science And Technology (CUSAT). It is followed by 75 (17.8%) from University of Calicut, 69 (16.4%) from Mahatma Gandhi University, 60 (14.3%) from University of Kerala.

References

1. Baskaran Chinnasamy. Electronic Journals accessing through UGC-INFONET Consortium by the faculty members and Research Scholars in Alagappa University, India. Brazilian Journal of Information Science, 2012;6(1):37-49.
2. Baskaran, C. and Kishorekumar, S. Scholarly Journals Access through UGC- INFONET among the faculty members in Alagappa University, Karaikudi, Tamilnadu. SRELS Journal of Information Management, 2013;50(2):201-207.
3. Kalbande Dattatraya T & Ingle R.N. Use of e-resources by the faculty members: a case study, International Research: Journal of Library and Information Science , 2013;3(3).
4. Pramanathan, U and Baskaran,C. "E-resources of UGC-Infonet access by the research scholars of Bharathidasan University, Tiruchirappalli, india." International Journal of Library and Information Studies 2014;4(3):76-85.
5. Nazir Tawfeek & Zahid Ashraf Wani. Usage of library UGC Infonet e-consortium resources by the University of Kashmir: A pragmatic approach, International Journal of Information Dissemination and Technology, 2015;5(2):131.
6. Katabalwa, Anajoyce Samuel & Anajoyce Samuel Katabalwa. Use of electronic journal resources by postgraduate students at the University of Dar es Salaam, Library Review, 2016;65(6/7):445-460.
7. Pal Jiban, K. Organizing models of library consortia: forming sustainable participation among potential partners in India, Annals of Library and Information Studies, 2016;63(3):194-202.
8. Bhat Nazir Ahmad & Shabir Ahmad Ganai. Impact of Availability of E-Resources on User Satisfaction in Agricultural Libraries of Northern India, SRELS Journal of Information Management, 2017;54(1): 42-45.
9. Wijetunge & Pradeepa. Usage of electronic resources by librarians of Sri Lankan universities, Annals of Library and Information Studies, 2017;64(1):21-27.

Original Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.4

Nutrigenomics Research during 1999-2018: A Scientometric Analysis

C. Baskaran[1], S. Saravanan[2]

Abstract

The study examines the Scientometric analysis of Nutrigenomicsresearch during the year 1999 to 2018. *Nutrigenomics* is a branch of nutritional genomics and is the study of the effects of foods and food constituents on gene expression.In order to carry out the research, the related data were downloaded from "Web of Science" database. The Scientometric analysis was applied to investigate and fulfill the objectives. It is found that 1060 records related to Nutrigenomics or Nutritional genomics in "Web of Science' was appeared during the periods. It is found that the author "Ordovas JM" and the country "United States" have produced the majority of records.

Keywords: Nutrigenomics; Nutritional Genomics; Scientometric; Web of Science.

Introduction

Nutrigenomics is an emerging science which investigates a certain area of nutrition that uses molecular tools to search, access and understand the several responses obtained through a certain diet applied between individual and population groups. As genetic science moves forward with lightning-fast speed, researchers have begun to understand that while certain individuals have genetic predispositions to developing certain diseases, the diseases may not actually occur. Why do some genetically-predisposed people get sick, while others do not? In many cases, some component of diet triggers, enhances, or suppresses certain gene interactions. Some dietary factors lead to increased protection from disease in susceptible individuals, while other dietary factors lead to increased risk of disease. The study of these gene-diet interactions forms the emerging science we call "nutritional genomics." This exciting field is poised to become the future of dietetics.

Author's Affiliation: [1]Librarian and Research supervisor [2]Research Scholar, Alagappa University, Karaikudi, Tamil Nadu 630003, India.

Reprint's Request: C. Baskaran, Librarian and Research supervisor, Alagappa University, Karaikudi, Tamil Nadu 630003, India.
E-mail: libsaraman@gamil.com

Received on 04.03.2018, **Accepted on** 02.04.2018

Review of Literature

Research output in diabetes during 1999-2008 on several parameters including its growth, rank and global publications share, citation impact, overall share of international collaborative papers, and share of major collaborative partners. It also analyses the characteristics of most productive institutions, authors, and highly-cited papers. The publications output, impact and collaborative publication share of India is also compared with China, South Korea and Brazil [1]. Relative growth rate (RGR) was found to be fluctuating trend during the study period. The doubling time (DT) was found to be increased and decreased trend in this study. Degree of collaboration and its' mean value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, NationalCheng King University, and Anna University [2]. A total of 2360 articles were downloaded from Pubmed database using the search term" Swine*" subjected to bibliometric data analysis techniques. Findings-A number of research questions pertaining to publication frequency, country, and institution productivity and collaborative were proposed and answered. Analysis shows that majority of the scientists preferred to publish research papers in multiple authorship. It also analyses the characteristics of most productive institutions, languages and journals [3]. This bibliometric study was made using the data retrieved from the Web of

Science (WoS) through the filter of the category in Cryptography as a subject search. A total number of 6610 records which were retrieved from the Web of Science was used to assess the academic productivity and distribution of research diversity of ryptography field from four major countries-China, USA, Taiwan and Japan which contributed more papers in cryptography and allied field of researches. The highest RGR is 0.44 in 2002 and Dt is 21.656 in 2008 measured during the period [4].

Relative Growth Rate (RGR) was found to be fluctuating trend during the study period. The Doubling time (Dt) was found to be increased and decreased trend in this study. Degree of collaboration and its means value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, NationalCheng King University and Anna University [5]. The average number of papers published per year was 910.75 during the period.

The highest numbers of papers were published above thousand during the years 2009 to 2011. It is observed RGR has been increased and decreased from 2005 (0.113)to 2011 (0.057). On the other view of doubling time (D t) has fluctuating trend from 2005 (6.132). Relative Growth Rate (RGR) was found to be a decreasing trend between 2005 and 2007 the decreasing trend between 2008 and 2011 shown during the period of study. The Doubling Time (D t) has shown as fluctuating trend during the period of study [6]. Relative Growth Rate (RGR) and Doubling Time (Dt) were found to be an increasing and decreasing trend shown during the period of study. The paper reveals a study of the authorship pattern and collaborative research in the field of Cardiology. The study measures the performance based on several parameters, country annual growth rate and collaborative index [7].

The result determines the 93.02 percent of papers were published in articles, Also it reveals from the study 2.28 percent of papers contributed by Hanaoka, F. It has been found high number of papers was collaborated with United States researchers in the field of Human DNA. The study measures the performance based on several parameters, country year-wise growth rate, authorship pattern, collaborative index, collaborative coefficient, leading collaborative countries and authors have contributed publications in Human DNA research [8]. Relative Growth Rate and Doubling Time of the publications value measured from 0.03 in 2010 and 2011 to 0.087 in 1985; from 0.80 in 1985 to 23.10 in 2010 and 2011 respectively found in this study. Among the document types, journal articles were the highest numbers with 7210 papers or 99.26%. From this study, it is observed that the Journal of Biological Chemistry has published with 529 research papers and find top position which is accounted for 7.28% of the total articles [9]. There was a sudden increase noticed in 2002, 2009, and 2012 while a declining trend was observed in 1996, 2003, and 2013. The calculated values of Maximum Likelihood Estimator, n and k are 0.24, 2.66 and 0.78 respectively. The CV at 0.05 significant level for 29 degrees of freedom is 42.56 and the calculated value of Chi-Square ($\chi 2$) obtained in this case is 5309.368. After words, the performance of researchers started diminishing. It was supported by SPI that ranges between 9 and 10 only [10].

Objective of the Study

The major objectives of the present study are

1. To observe the year-wise and author wise Publications.
2. To analyse RGR and Dt of the publications.
3. To examine the publication where appeared in n various languages.
4. To observe highest author productivity and country wise publications.
5. To find the highest productivity of the institutions and Journals.

Methodology

The Scientometric analysis was used in this study to investigate publications related to "Nutrigenomics" that have been indexed by Web of Science only during the years 1999-2018. In order to satisfy the objectives, the data were collected from the Web of Science database during the month of Feb 2018. Hist Cite software was used to extract the data from the database and to analysis the data for the study.

Data Analysis and Findings

Year wise Distribution of Publications

A total of 1060 Nutrigenomics records were published in given period of study (1999 to 2018). It is found from Table 2 that most number of Publications 110 (10.4%) were produced in the year 2008. It is followed by 91 (8.6%) in 2013 and 90 (8.5 %) were produced in the year 2010. It is further found that less number of only 1 (0.1 %) publications

was produced in the year 1999 and there were no publication in the year 2002 and there were 2 (0.2%) for which the Publication year is unknown is exhibits in Figure 1.

RGR and Doubling time of the Publications

It analysed that Table 2. Relative Growth rate and Doubling time of the publication of Nutrigenomics during 1999 to 2018. It is found that highest RGR was 2.068 in 2018 and lowest RGR was 0.22 in 2010. On other hand, Dt is observed that highest to be found 1.088 in 2003 and lowest Dt was 0.031 in 2010. It could be found that the overall RGR and Dt are 10.974 and 12.754. (Figure 1).

Distribution of Publication by Author

The study was analyzed the publications of first ten authors of Nutrigenomics research which are indexed in "Web of Science" database in the given period and same is shown in Table 3. It is found from table 2 that the majority of publications is contributed by Ordovas JM, 30 (2.8%) produced by the first author during the period and the second position is by El-Sohemy A, 27 (2.5%), and the third position is by Kalput J, 24 (2.3%) and in the tenth Mutch DM with 13 paper contribution (1.2%).

Distribution of Publications by Language

The study is analyzed to find out the number of

Table 1: Year wise Distribution of Publications

S. No	Publication Year	Records	Percentage
1	1999	1	0.1
2	2001	5	0.5
3	2002	8	0.8
4	2003	17	1.6
5	2004	32	3
6	2005	45	4.2
7	2006	60	5.7
8	2007	88	8.3
9	2008	110	10.4
10	2009	88	8.3
11	2010	90	8.5
12	2011	57	5.4
13	2012	74	7
14	2013	91	8.6
15	2014	72	6.8
16	2015	53	5
17	2016	69	6.5
18	2017	87	8.2
19	2018	11	1
20	Unknown	2	0.2
	Total	1060	

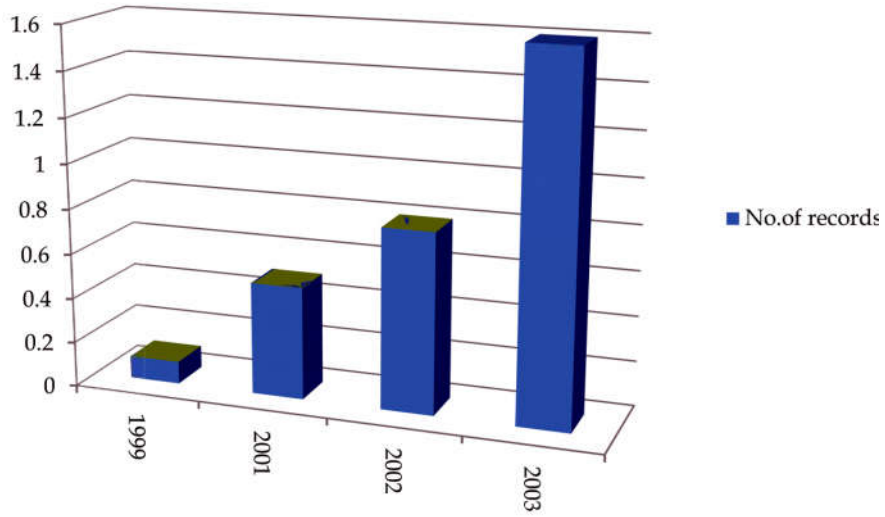


Fig. 1: Year wise Distribution of Publications

Table 2: RGR and Doubling time of the Publications

Publication Year	Records	%	W1	W2	RGR	Dt
1999	1	0.1	0	0	**0**	0
2001	5	0.5	0	1.609	1.609	2.321
2002	8	0.8	1.609	2.079	0.473	0.682
2003	17	1.6	2.079	2.833	0.754	1.088
2004	32	3	2.833	3.465	0.632	0.911
2005	45	4.2	3.465	3.806	0.341	0.492
2006	60	5.7	3.806	4.094	0.288	0.070
2007	88	8.3	4.094	4.477	0.679	0.979
2008	110	10.4	4.477	4.700	0.223	0.321
2009	88	8.3	4.700	4.477	0.223	0.321
2010	90	8.5	4.477	4.499	0.022	0.031
2011	57	5.4	4.499	4.043	0.456	0.658
2012	74	7	4.043	4.304	0.261	0.376
2013	91	8.6	4.304	4.510	0.206	0.297
2014	72	6.8	4.510	4.276	0.234	0.337
2015	53	5	4.276	3.970	0.306	0.441
2016	69	6.5	3.970	4.234	0.264	0.380
2017	87	8.2	4.234	4.465	0.231	0.333
2018	11	1	4.465	2.397	2.068	0.258
Unknown	2	0.2	2.397	0.693	1.704	2.458
Total	**1060**				**10.974**	**12.754**

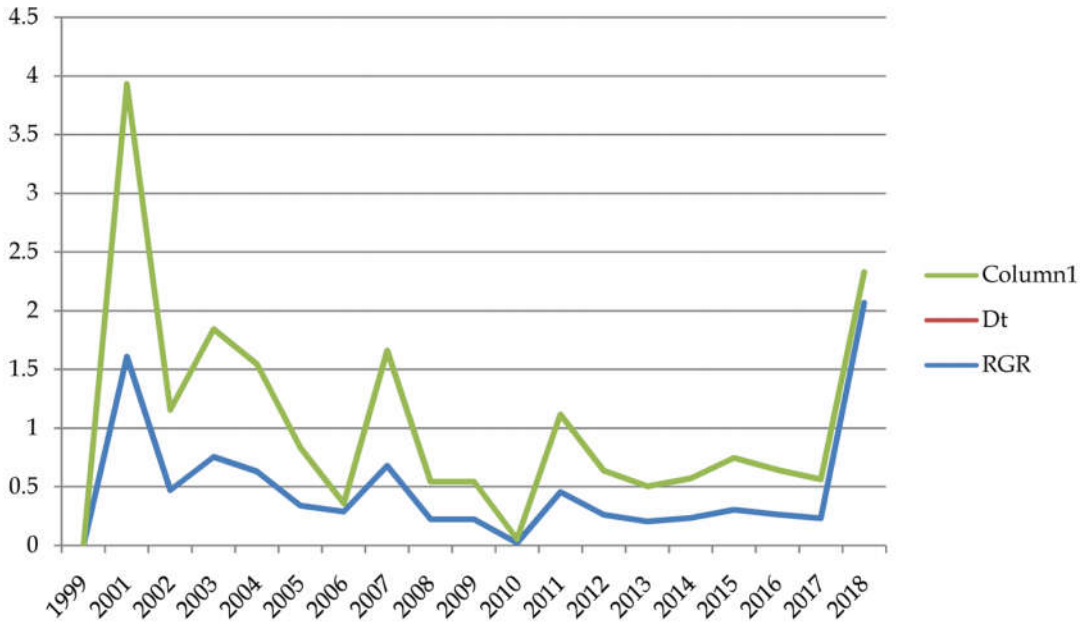


Fig. 2: RGR and Doubling time of the Publication

Table 3: Distribution of Publication by Author

S. No	Author	Records	Percentage
1	Ordovas JM	30	2.8
2	El-Sohemy A	27	2.5
3	Kaput J	24	2.3
4	van Ommen B	23	2.2
5	Muller M	21	2
6	Ferguson LR	20	1.9
7	Fenech M	19	1.8
8	Martinez JA	17	1.6
9	Milner JA	13	1.2
10	Mutch DM	13	1.2

publications produced in various languages and the same is given in Table 4.

It is found from table 3 that most number of the publications 1036 (97.7%) were produced in English language. It is further observed that only 8 (0.8%) of publications were published in Spanish and 4 (0.4%) of publication was produced in German. Portuguese language has published only 3 publications (0.3%) and Duch, Polish and slovene has got 2 (0.2%) publications each. French, Hungarian, Serbian published single record (0.1%) in their respective language.

Source-wise Publications of the Documents

The Table 4 provides the distribution of publication on nutrigenomics research by document types. It is clearly noticed from the table that the major source of publication in nutrigenomics research comes in the form of articles with 485 records (45.8 %), followed by review 264 (24.9%) and the third 109 (10.7%) Article: Proceeding paper and the leased document type are Article; Early Access, Article; Retracted and Review; Early Access (0.1%).

Table 4: Distribution of Publications by Language

S. No	Language	Records	Percentage
1	English	1036	97.7
2	Spanish	8	0.8
3	German	4	0.4
4	Portuguese	3	0.3
5	Dutch	2	0.2
6	Polish	2	0.2
7	Slovene	2	0.2
8	French	1	0.1
9	Hungarian	1	0.1
10	Serbian	1	0.1
	Total	1060	

Table 5: Source-wise Publications of the Documents

S. No	Sources	Records	Percentage
1	Article	485	45.8
2	Review	264	24.9
3	Article; Proceedings Paper	109	10.3
4	Meeting Abstract	90	8.5
5	Editorial Material	76	7.2
6	Review; Book Chapter	19	1.8
7	Article; Book Chapter	4	0.4
8	Correction	4	0.4
9	Letter	3	0.3
10	News Item	3	0.3
11	Article; Early Access	1	0.1
12	Article; Retracted Publication	1	0.1
13	Review; Early Access	1	0.1
	Total	1060	

Table 6: Distribution of the Journal wise Publications

S. No	Journals	Records	Percentage
1	Journal of Nutrigenetics and Nutrigenomics	67	6.3
2	Genes and Nutrition	51	4.8
3	British Journal of Nutrition	33	3.1
4	OMICS-A Journal of Integrative Biology	32	3
5	Annals of Nutrition and Metabolish	26	2.5
6	Journal of Nutrition	24	2.3
7	Molecular Nutrition and Food Research	23	2.2
8	Journal of the American dietetic Association	20	1.9
9	American Journal of clinical Nutrition	18	1.7
10	Nutrients	18	1.7

Distribution of the Journal wise Publications

The publication on "Nutrigenomics" in the journals is analyzed and the same is given in Table 6.It is found from Table 5 that "Journal of Nutrigenetics and Nutrigenomics" has published more number of Publications 67 (6.3%), followed by "Genes and Nutrition" published 51 (4.8%).

It is further found that 33 (3.1%) publications related to "Nutrigenomics" have been published in "British Journal of Nutrition". It is also showed that 18 (1.7%) of publications have been published in both journals "American Journal of clinical Nutrition" and "Nutrients".

Country wise Publications

This study is also focused to analyze the number of publications produced on "Nutrigenomics" by country wise and the same is given in Table 6. It is found from table 7 that USA has produced majority 297 (28 %) of publications on "Nutrigenomics", followed by UK 114 (10.8 %) and Netherland has produced 104 (9.8 %) and Australia is in 10th place on number of publication of about 45 (4.2%) in the table.

Institutions-Wise Publications

Table 8 observed that institutions wise productivity of "Nutrigenomics among the global level institutions. It can be seen that there are ten institutions ranked and one among top institution is identified that Wageningen University (37) 3.5% of the publications. It followed by Tufts University (3.2) University Toronto (3) University Calif Davis (2.9) Maastricht University (2.5) INRA NCI (2.2) University Wageningen & Research Centre University (2.2) and Wageningen & Research Centre (2.1%) of the Publications were brought out by the Institutions.

Conclusion

The present study is to highlight the research productivity in Nutrigenomics. A total of 1060 publications werepublished during the year 1999-2018. Maximum research output were found in the year 2008. The study revealed that United States is a significant country dominating in the Research and Development of Nutrigenomics research.

Nutrigenomics is the main keyword used by the researcher. In terms of source journal and language, maximum articles related to nutrigenomics literature were pulished in English language and most prolific journal is Journal of Nutrigenetics and nutrigenomics. Related to physical forms of Publications, Article constitute 47.78%, followed by Journals (42.33%). This type of study are the helping tool to analyse the emerging research areas to bridge the gap in future.

Table 7: Country wise publications

S. No	Country	Records	Percentage
1	USA	297	28
2	UK	114	10.8
3	Netherlands	104	9.8
4	Canada	101	9.5
5	Spain	93	8.8
6	Unknown	74	7
7	Italy	63	5.9
8	France	53	5
9	Germany	49	4.6
10	Australia	45	4.2

Table 8: Institutions-wise publications

S. No	Institution	Records	Percentage
1	Unknown	44	4.2
2	Wageningen University	37	3.5
3	Tufts University	34	3.2
4	University Toronto	32	3
5	University Calif Davis	31	2.9
6	Maastricht University	27	2.5
7	INRA	23	2.2
8	NCI	23	2.2
9	University Wageningen& Research Centre	23	2.2
10	Nestle Research Centre	22	2.1

Reference

1. B.M. Gupta, Har Kaur and Adarsh Bala. Mapping of Indian Diabetes Research during 1999-2008: A Scientometric Analysis of Publications Output, DESIDOC Journal of Library & Information Technology, 2011;31(2):143-152.
2. Baskaran, C. Research productivity of Alagappa University during 1999-2011: A bibliometric study DESIDOC Journal of Library & Information Technology, 2013;33(3).
3. Baskaran C, Sivakami N. Swine influenza research output: a bibliometric analysis, SRELS Journal of Information Management, 2014;51(1):13-20.
4. Baskaran C. Scientometric analysis of cryptography research output,SRELS journal of information management, 2013;50(4),413-421.
5. Baskaran C. Research growth trend and author collaboration of Alagappa University in India during 1999-2011, International Journal of Library and Information Studies, 2013;3(1):57-64.
6. Baskaran C. Research Productivity of Graph Theory during 2004-2011: a Bibliometric Study, SRELS Journal of Information Management, 2012;49(6): 683-691.
7. Baskaran C and Sadik Batch MS. Publications Pattern and Author Collaboration of Cardiology Research, SRELS Journal of Information Management, 2012;49(2):199-207.
8. Murugiah P & Baskaran C. Assessment of research collaboration on human DNA in Japan during 1990-2011, International Journal of Library and Information Studies, 2013;3(2):426-29.
9. Murugiah P & Baskaran C. Status of Human DNA Research in the United States of America: A Scientometric Analysis.Journal of Advances in Library and Information Science, 2013;3(4):28-334.
10. Baskaran C, Karuilancheran C. Activity Index and Lotka's Law Application with Diabetes and Allied Diseases in India During 1995–2013, - SRELS Journal of Information Management, 2015;52(6):423-431.

Original Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.5

Prospects for Continuing Professional Education for LIS Professionals in Health Science College Libraries of Dakshina Kannada and Udupi Districts

Chandrashekhar D.[1], Mahesh V. Mudhol[2]

Abstract

The study attempts to find out whether the development of the ICT skills has any influence on the informal needs in the digital era, the awareness of library professional activities, educational and their skills in handling the new technologies. Out of 68 Institution, 153 were duly filled Questionnaire were received. The investigator attempted to make a study of the Prospects for continuing professional education for LIS professionals in health science college libraries of Dakshina Kannada and Udupi districts.

Keywords: ICT Skills; Developing Technology Skills; Professional Development Programmes.

Introduction

The training programmes can be organized in different methods. Training in the health science associations should include the use of latest information technologies relevant to the library and information science profession. Some of the associations included those on Web design, management of electronic resources and digitization of materials, which would increase the visibility of conferences, paper publications/research, special lectures etc. Attending conferences will definitely provide knowledge generated during discussion of the seminars / conferences and during social networking environments. Interactions with librarians would get ideas about the new developments, which are taking place in their respective libraries from library automation and its problems, digital library development activities, institutional development activities and use of different types of software's from open source to purchased ones. Also arrangements of the staff meetings, open lectures and public events, would also invite topics for discussion during that time would be high value.

The terms skills, knowledge, competencies and such other terms are used synonymously in this study. These terms differ only slightly in meaning from one another. Specifically, 'Skills' refers to do something well, arising from talent, training or practice. The 'Knowledge' refers to acquaintance with facts, truths, profession or with a particular subject or branch of learning. The 'Competence' refers to the quality or state of having sufficient skills, knowledge and requirements to do a certain job.

Review of Literature

Adanu (2007) reported the research carried out among professional librarians in the five state-owned university libraries in Ghana. The results of the survey using questionnaire and interview show that the library environment in the state-owned universities was supportive largely of CPD. The study reveals that the professional librarian's involvement in CPD was a shared responsibility of the library and the individual. The author stresses the need for CPD and workplace learning to meet the challenges and changes faced by the library profession, due to the developments in ICT.

Author's Affiliation: [1]Librarian, NGSM Institute of Pharmaceutical Sciences, Nitte Univesity, Paneer, Deralakatte, Mangaluru, Karnataka 575018, India. & Research Scholar, Mangalore University. [2]Retrd. Professor & Chairman, Dept. of Lib & Info. Sc. Mangalore University, Mangalagangothri, Mangalore, Karnataka 574199, India.

Reprint's Request: Mahesh V. Mudhol, Retrd. Professor & Chairman, Dept. of Lib & Info. Sc., Mangalore University, Mangalagangothri, Mangalore, Karnataka 574199, India.
E-mail: maheshmudhol@yahoo.com

Received on 15.01.2018, **Accepted on** 02.04.2018

Alemna (1998) pointed out the education and training needs of future librarians in Ghana. He assumed that both short- and long-term training programmes must develop based on the assessed needed skills–actual and potential.

Guha (2006) presents the opportunities that Digital Learning Environments has put forward for teaching and learning. Focusing on a particular aspect of professional development i.e., continuing professional education (CPE) in the light of Information and communication technology (ICT), it also presents an open access Continuing Education Virtual Classroom, developed to provide a continuing professional education platform to LIS professionals in India.

Kavulya (2007) explained how to assess the status of the job market for library and information science (LIS) professionals in Kenya and the adequacy of current curricula and training resources in LIS training institutions in the country and secondly to identify the areas of training and critical IT skills required by LIS professionals in relation to current job market and performance requirements.

Srivastava and Srivastava (2004) surveyed in Jaipur the opportunities available for the professional development of librarians and their satisfaction level. The results reveal that the librarians need opportunities for higher education for attending conferences and are mostly ignorant of the developments in information technology. Most librarians are dissatisfied with their job and suggest that the authorities should encourage the library professionals to participate in professional development activities and provide opportunities for higher education.

Objective of the Study

- To identify the level of developing technology skills of the library professionals.
- To recommend PDP is improving the knowledge/ skills of library professionals.
- To access the ICT competencies of the library professionals with a specific focus on contribution of the publications.

Scope and Limitation of the Study

The study includes employed library professionals of the health science library professionals of the Dakshina Kannada and Udupi districts covered in the survey. The study considered the college offering health science courses related to Medical, Dental, Nursing, Ayurveda, Pharmaceutical, Physiotherapy, Speech and Hearing disciplines. Of the 68 Institutions, 4 Institution have a common central library, hence the study purpose questionnaire was distributed to Medical/Dental, Nursing and Allied Sciences (Pharmacy, Physiotherapy, Ayurveda) and composite Libraries (Father Muller Charitable Institutions Mangalore, Manipal University, Nitte (Deemed to be University) Mangalore, Yennopoya (Deemed to be University) Mangalore.

Methodology

Keeping in view the above objectives, structured questionnaire was administered to collect the details about the professional developing skills of respondents towards the searching of the information resources. Totally, 175 Questionnaires were administered, only 153 filled in were Questionnaires returned making a moderate response rate of 87.43% which adequate for the analysis. Simple frequencies counting and percentages were used in reporting the findings.

Result and Discussion

Distribution of the Professionals Based on their Gender

The distribution of the respondents according to their gender is depicted in Table 1. This information was collected to study the demographic factor influencing motivation and performance. Of the 153 respondents, a majority 111 (72.5%) of the respondents were female and 42 (27.5%) of the respondents were male. The table also reveals that the highest female represents 52 (77.6%) is from Nursing/Allied Sciences and lowest female representation 39 is from Medical/Dental. Among the male respondents, the highest representation 15 (22.4%) was from Nursing/Allied Sciences and the lowest representation 13 (27.7%) was from Composite Libraries.

Qualification wise Distribution of Respondents

Table 2 shows that designation wise detail of library professionals based on their qualification. It is seen that 70 (45.8%) of the respondents with an M.LISc degree. 53 (34.6%) is from the respondents have a DLISc. Among the different Colleges, 26 (66.7%) in the Medical/Dental colleges have a Post Graduate Degree whereas only 1 (1.5%) respondent of Nursing/ Allied Science is a Ph.D. degree in Library Science.

Table 1: Gender wise Distribution of Respondents

Gender	Institution			Total
	Medical/Dental	Nursing/Allied Science	Composite Libraries	
Male	14(35.9)	15(22.4)	13(27.5)	42 (27.5)
Female	25(64.1)	52(77.6)	34(72.3)	111(72.5)
Total	39(100)	67(100)	47(100)	153(100)

Note: Numbers given in the parenthesis represents the percentage

Table 2: Qualification wise Distribution of Respondents

Qualification	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
Ph.D	1(2.6)	1 (1.5)	4(8.5)	6(3.9)
M.Phil	1(2.6)	2(3.0)	1(2.1)	4(2.6)
M.LISc	26(66.7)	26(38.8)	18(38.3)	70(45.8)
B.LSc.	3(7.7)	11(16.4)	6(12.8)	20(13.1)
D.LISc	8(20.5)	27(40.3)	18(38.3)	53(34.6)

Note: Numbers given in the parenthesis represents the percentage

Table 3: Designation-wise Distributions of Respondents

Designation	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
Librarian	9(23.1)	27(40.3)	8(17.0)	44(28.8)
Deputy Librarian	6(15.4)	2(3.0)	1(2.1)	9(5.9)
Asst. Librarian	17(43.6)	23(34.3)	18(38.3)	58(37.9)
Library Asst.	7(17.9)	15(22.4)	20(42.6)	42(27.5)

Note: Numbers given in the parenthesis represents the percentage

Table 4: Choice of the library Professions

Experience	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
It was one of the best professions	24(61.5)	40 (59.7)	35(74.5)	99(64.7)
It was accidental	14(35.9)	19(28.4)	16(34.0)	49(32.0)
Highly remunerative	7(17.9)	5(7.5)	14(29.8)	26(17.0)
Better status and most respectable job	16(41.0)	21(31.3)	21(44.7)	58(37.9)
Admiration & love	13(33.3)	30(44.8)	25(53.2)	68(44.4)
For Livelihood	7(17.9)	24(35.8)	21(44.7)	52(34.0)

Note: Numbers given in the parenthesis represents the percentage

Distribution of the professionals based on their designation

Table 3 indicates that 58 (37.9%) respondents are designated as Asst. Librarian and nearly 9 (5.9%) library professionals designated as a Deputy Librarian. 20 (42.6%) respondents of composite Libraries are designated as a Library Asst. 1 (2.1%) professionals are designated as Deputy librarian in Composite Library.

Developing Technology skills for library professionals

- *The Choice of the library Professionals*

To some extent, the work interests of the library professionals affect the development of professional skills. Further, the working interest is concerned with the choice of librarianship as their profession. Because, there are various reasons to join the librarianship such as better profession, better working conditions, and salary, to earn a livelihood, a profession with status and respect, ideal for people with admiration and love for books, library, and such others.

From the result of table 4, it can be observed that out of 153 professionals, 99 (64.7%) professionals felt that it was one of the best profession when compared to others, 68 (44.4%) professionals felt that they have chosen it for their admiration and love for the library profession, 58 (37.9%) professionals felt

that it is a better status and most respectable job in the society, 52 (34.0%) professionals stated that they have chosen the profession just to earn livelihood, 49 (32.0%) professionals expressed that it was a mere accident that they joined the library profession, 26 (17.0%) professionals felt that they can better remunerative.

It is observed from the responses given by different professionals covered in the study that majority of the professionals joined this profession is one of the best profession compared to others and the remaining factors are mixed and varied.

• *Institution is deputing to attended the professional development programme*

In the table 5 out of total 153 professionals, 101 (66.0%) professionals are deputed to training programme and 52 (34.0%) professionals are not deputed to the training programme. Among 101 (66.0%) professionals, those who are deputed to the training programme, 30 (76.9%) are medical/dental library professionals, 36 (53.7%) are Nursing/ Allied sciences and 35 (74.5%) are composite library professionals.

• *Periodicity of deputation of the professional development programme*

Of the total professionals 153, only 101 (66.0%) professionals are deputed to attend the training programmes. Only 53 (52.5%) professionals are deputed to attend the training programmes, some of the managements are deputing library professionals to attend the programme once in a year 28 (27.7%) of professionals are composite library professionals are attend the training programme, 3 (3.0%) of library professionals are deputed to attend the training programmes twice in a year. Once in two years, 6 (5.9%) professionals are deputed to attend the training programmes. Of all 11 (10.9%) of library professionals, those who are deputed t attend the training programmes once in 2 years.

Table 5: Attending the professional development programme

PDP	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
Deputing	30(76.9)	36 (53.7)	35(74.5)	101(66.0)
Not Deputing	9(23.1)	31(46.3)	12(25.5)	52(34.0)

Note: Numbers given in the parenthesis represents the percentage

Table 6: Deputation of the professional development programme

Periodicity	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
As & when I wish to attend	17(56.7)	17 (47.2)	19(54.3)	53(52.5)
Once in a year	11(36.7)	6(16.7)	11(31.4)	28(27.7)
Twice in a Year	1(3.3)	1(2.8)	1(2.9)	3(3.0)
Once in two years	0(0)	4(11.1)	2(5.7)	6(5.9)
Once in a period more than two years	1(3.3)	8(22.2)	2(5.7)	11(10.9)

Note: Numbers given in the parenthesis represents the percentage

Table 7: Benefits from the institution

	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
Special leave to attend the conference, seminar etc	28(71.8)	37(55.2)	38(80.9)	103(67.3)
TA/DA for attending conference	17(43.6)	30(44.8)	38(80.9)	85(55.6)
Promoted as per govt. norms applicable to the faculty	7(17.9)	7(10.4)	8(17.0)	22(14.4)
Representation in academic and other committees	7(17.9)	4(6.0)	11(23.4)	22(14.4)
Voting rights in the University senate election	14(35.9)	17(25.4)	2(4.3)	33(21.6)

Note: Numbers given in the parenthesis represents the percentage

• *Benefits from the institution to the library professionals*

The health library professionals were asked to indicate the benefits from the institution to the library professionals and the result are shown in the table 7. It was found that 103 (67.3%) special leave to attend the conference, seminar etc. 85 (55.6%) the institution is proving TA/DA for attending conference to the library professionals.

• *Reason for attending Professional development program*

The health library professionals were asked to indicate the reason of attending professional development programme and the result are shown in the table 8. It was found that 122 (79.7%) of the library professionals attend PDP to accruing new skills and 108 (70.6%) to update knowledge or basic education. 86 (56.2%) of the professionals indicate that they get trained in the latest technologies. 85 (55.6%) preferred to attend PDP to improve library services.

Mandatory for promotion was indicated as one reason to participate in PDP by 25 (16.3%) of library professionals. 81 (52.9%) professionals pointed out that PDP is necessary to present article articles in the seminars.

Table 8: Reason for attending Professional development program

PDP	Institution			Total
	Medical/Dental	Nursing/Allied Sciences	Composite Libraries	
To acquire new skills	34(87.2)	46(68.7)	42(89.4)	122(79.7)
To update knowledge or basic education	34(87.2)	36(53.7)	38(80.9)	108(70.6)
To get trained in the latest technologies	28(71.8)	30(44.8)	28(59.6)	86(56.2)
To improve library services	32(82.1)	28(41.8)	25(53.2)	85(55.6)
It is mandatory for promotion	10(25.6)	13(19.4)	2(4.3)	25(16.3)
It helps to present articles in the seminars	23(59.0)	33(49.3)	25(53.2)	81(52.9)

Note: Numbers given in the parenthesis represents the percentage

Table 9: Attended training and development programme

Training and Development	Institution	None	1-5	6-10	11-16	above	Total
Refreshers Course	Medical/Dental	32(82.1)	7(17.9)	0(0)	0(0)	0(0)	39
	Nursing/Allied sciences	61(91.0)	6(9.0)	0(0)	0(0)	0(0)	67
	Composite Libraries	43(91.5)	4(8.5)	0(0)	0(0)	0(0)	47
	Total	136(88.9)	17(11.1)	0(0)	0(0)	0(0)	153
Orientation Program	Medical/Dental	18(46.2)	20(51.3)	1(2.6)	0(0)	0(0)	39
	Nursing/Allied sciences	58(86.6)	9(13.4)	0(0)	0(0)	0(0)	67
	Composite Libraries	36(76.6)	10(21.3)	1(2.1)	0(0)	0(0)	47
	Total	112(73.2)	39(25.5)	2(1.3)	0(0)	0(0)	153
Workshops/training program	Medical/Dental	16(41.0)	15(38.5)	5(12.8)	2(5.1)	1(2.6)	39
	Nursing/Allied sciences	45(67.2)	18(26.9)	3(4.5)	1(1.5)	0(0)	67
	Composite Libraries	20(42.6)	23(48.9)	2(4.3)	1(2.1)	1(2.1)	47
	Total	81(52.9)	56(36.6)	10(6.5)	4(2.6)	2(1.3)	153
Short term course	Medical/Dental	33(84.6)	5(12.8)	1(2.6)	0(0)	0(0)	39
	Nursing/Allied sciences	63(94.0)	4(6.0)	0(0)	0(0)	0(0)	67
	Composite Libraries	45(95.7)	2(4.3)	0(0)	0(0)	0(0)	47
	Total	141(92.2)	11(7.2)	1(0.7)	0(0)	(0)	153
Seminar, conference, symposia	Medical/Dental	19(48.7)	12(30.8)	1(2.6)	5(12.8)	2(5.1)	39
	Nursing/Allied sciences	47(70.1)	16(23.9)	2(3.0)	1(1.5)	1(1.5)	67
	Composite Libraries	24(51.1)	18(38.3)	0(0)	4(8.5)	1(2.1)	47
	Total	90(58.8)	46(30.1)	3(2.0)	10(6.5)	4(2.6)	153

Note: Numbers given in the parenthesis represents the percentage

• *Attended training and development programme*

The library profession is a multidimensional task. The library professionals work like knowledge disseminators, information specialists, documentation officers, knowledge managers, information helpers and information providers. The library professionals must able to satisfy the end users. In this information era, the professionals must be able to provide pinpointed right information at right time to their users, especially in the health science college libraries. Hence, to provide the latest information, the applications of latest technology, the library professionals need training and development programmes. In this regard, a question was asked whether you have attended any training and development programme or not. The following table explains in their service period have you attended any training and development programme.

The table 9 reveals that the health science library professionals were asked to whether they have attended the training and development programmes in their service period, out of 153 health science library professionals only 17 (11.1%) are attended to the refresher course. 39 (25.5%) orientation programme, 56 (36.6%) have attended 1-5 times to the workshop was organized by the organization. 10 (6.5%) have attended 6-10 times to the workshop, 4 (2.6%) 11-16 time to the workshop, 2 (1.3%) library professionals have attended more than 16 times to the workshop. 46 (30.1%) have attended 1-5 times to the seminars were organized by the organization, 3 (2.0%) have attended 6-10 times, 10 (6.5%) have attended 11-16 time 4 (2.6%) library professionals have attended more than 16 times to the seminars

• *Professional contribution of the library professional*

The publication patterns of health science library professionals are evaluated by analyzing the number of publication in Journals, Book/Book chapter, Conference proceedings etc. The table 10 shows that the trends in a publication or the productivity of different categories of library professionals, only 4 (2.6%) contributed 1-5 publication in Books/Book chapters. Only 14 (9.2%) professionals published research papers in research journals. The table reveals that out of 153 professionals, only 17 (11.1%) professionals research papers are published less than 5 times in conference, 3 (2.0%) have published papers 6-10 and 11-16 times in conference, among those who published papers more than 16 times are 2 (1.3%). Only 17 (11.1%) professionals research papers are presented less than 5 times in conference,

Table 10: Professional contributions

Publication work	Institution	None	1-5	6-10	11-16	above	Total
Books/Chapter	Medical/Dental	38(97.4)	1(2.6)	0(0)	0(0)	0(0)	39
	Nursing/Allied sciences	67(100)	0(0)	0(0)	0(0)	0(0)	67
	Composite Libraries	44(93.6)	3(6.4)	0(0)	0(0)	0(0)	47
	Total	149(97.4)	4(2.6)	0(0)	0(0)	0(0)	153
Research Papers published in Journal	Medical/Dental	35(89.7)	4(10.3)	0(0)	0(0)	0(0)	39
	Nursing/Allied sciences	63(94.0)	4(6.0)	0(0)	0(0)	0(0)	67
	Composite Libraries	40(85.1)	6(12.8)	0(0)	0(0)	1(2.1)	47
	Total	138(90.2)	14(9.2)	0(0)	0(0)	1(0.7)	153
Research paper published in conference proceedings	Medical/Dental	30(76.9)	7(17.9)	1(2.6)	1(2.6)	0(0)	39
	Nursing/Allied sciences	60(89.6)	6(9.0)	0(0)	1(1.5)	0(0)	67
	Composite Libraries	38(80.9)	4(8.5)	2(4.3)	1(2.1)	2(4.3)	47
	Total	128(83.7)	17(11.1)	3(2.0)	3(2.0)	2(1.3)	153
Research paper Presented in the conference	Medical/Dental	29(74.4)	5(12.8)	3(7.7)	2(5.1)	0(0)	39
	Nursing/Allied sciences	58(86.6)	8(11.9)	1(1.5)	0(0)	0(0)	67
	Composite Libraries	38(80.9)	4(8.5)	2(4.3)	1(2.1)	2(4.3)	47
	Total	125(81.7)	17(11.1)	6(3.9)	3(2.0)	2(1.3)	153
Special Lecture/ Training Program/ workshops	Medical/Dental	33(84.6)	6(15.4)	0(0)	0(0)	0(0)	39
	Nursing/Allied sciences	65(97.0)	2(3.0)	0(0)	0(0)	0(0)	67
	Composite Libraries	40(85.1)	6(12.8)	1(2.1)	0(0)	0(0)	47
	Total	138(90.2)	14(9.2)	1(0.7	0(0)	0(0)	153
Poster presentation	Medical/Dental	37(94.9)	2(5.1)	0(0)	0(0)	0(0)	39
	Nursing/Allied sciences	62(92.5)	5(7.5)	0(0)	0(0)	0(0)	67
	Composite Libraries	43(91.5)	4(8.5)	0(0)	0(0)	0(0)	47
	Total	142(92.8)	11(7.2)	0(0)	0(0)	0(0)	153

Note: Numbers given in the parenthesis represents the percentage

6 (3.9%) have presented papers 6-10 and 11-16 times in conference, among those who presented papers more than 16 times are 2 (1.3%) Only 14 (9.2%) professionals have given special lectures as resource persons less than 5 times. Among whom, 1 (0.7%) have given a special lecture as 6-10 times. The table reveals that 11 (7.2%) professionals have given a poster presentation at the conferences. 4 (2.6%) professionals contributed 1-5 publication in Books/ Book chapters. 14 (9.2%) library professionals for having contributed 1-5 research paper and published in research journals. only 17 (11.1%) professionals research papers are published less than 5 times in conference, 3 (2.0%) have published papers 11-16 times in conference, among those who published papers more than 16 times are 2 (1.3%) only 17 (11.1%) professionals research papers are presented less than 5 times in conference, 6 (3.9%) have presented papers 11-16 times in conference, among those who presented papers more than 16 times are 2 (1.3%) Only 14 (9.2%) professionals have given special lectures as resource persons less than 5 times. Among whom, 1 (0.7%) have given a special lecture as 6-10 times. The table reveals that 11 (7.2%) professionals have given a poster presentation at the conferences.

Findings

1. From the result of table 4, it can be observed that, 99 (64.7%) professionals felt that it was library professionals is one of the best profession.
2. It reveals that, 101 (66.0%) professionals are deputed to attend the training professional development programs and 52(34.0%) professionals are not deputed to the training program.
3. 101 (66.0%) professionals are deputed to attend the training programs. Only 53 (52.5% professionals are deputed to attend the training programs, whenever they wished to attend. Some of the managements are deputing once in a year 28 (27.7%), 3 (3.0%) twice in a year. Once in two years, 6 (5.9%), 11 (10.9%) once in 2 years,
4. It was found that 122 (79.7%) of the library professionals attend PDP to accruing new skills and 108 (70.6%) to update knowledge or basic education. 86 (56.2%) of the professionals indicate that they get trained in the latest technologies. 85 (55.6%) preferred to attend PDP to improve library services. Mandatory for promotion was indicated as one reason to participate in PDP by 25 (16.3%) of library professionals. 81 (52.9%) professionals pointed out that PDP is necessary to present article articles in the seminars.
5. 17 (11.1%) are attended 1-5 time to the refresher course, 39 (25.5%) of the library professionals have attended orientation program, 56 (36.6%) have attended to the workshop. 11 (7.2%) have attended to the short-term course 46 (30.1%) have attended to the seminars were organized by the organization.
6. 4 (2.6%) professionals published Book/Book chapters. Only 14 (9.2%) professionals published research papers in research journals. only 17 (11.1%) professionals research papers are published in conference, 14 (9.2%) professionals have given special lectures. 11 (7.2%) professionals have given a poster presentation in the conferences.
7. 4 (2.6%) professionals contributed the Books/ Book chapters, Only 14 (9.2%) professionals published research papers in research journals, 17 (11.1%) professionals research papers are published and presented in conference, 14 (9.2%) professionals have given special lectures as resource persons. 11 (7.2%) professionals have given a poster presentation in the conferences.

Suggestion and Conclusion

After the investigation of developing technology skills of the library professionals, it is observed that respondents of Health Science College libraries professionals of Dakshina Kannada and Udupi districts are prefer using the ICT skills in the library. They perceived that ICT is more knowledgeable, exhaustive, authoritarian and easy to use, and believed that knowledge and skills is essential ICT applications.

Majority of health science library professionals were using ICT mainly for developing technology skills and agreed that the professionals' attitude is the main reason to choose information on the ICT. It is, however, commendable that the health science college library professions have knowledgeable in various tools of the ICT applications. It is also praiseworthy to see that professional contribution is attended training and development programs, scientific paper publications, conference/training programs etc.

Reference

1. Adanu T.S, Continuing professional development (CPD) in state-owned university libraries in Ghana, Library Management, 2007;28(6/7):292-305.

2. Alemna, A.A, Education and training of the future librarian in Ghana, Librarian Career Development, 2007;6(1),3-6.
3. Anwar, M.A., & Al-Ansari, Developing working LIS professionals in the Gulf cooperation council countries: a study of the perception of dean and directors of academic libraries, The Electronic Library, 2002;20(3):231-240.
4. Guha, N., ICT for continuing professional education for LIS professionals. (2006).
5. Kattimani S.F. & Naik R.R. ICT skills of Library professionals working in engineering college of Karnataka, Kumbargoudar P. and Atik-ur-rahaman, S.M. (Eds.), Advances in Social Sciences, (Anu Books, Meerut) 2012.p.73-82.
6. Kavulya Joseph. M. Training of library and information science (LIS) professionals in Kenya: A needs assessment. Library Review, 2007;56(3): 208-223.
7. Srivastava A. Opportunities for professional development of librarians: a study of the level of satisfaction among librarians of institutions of higher education in Jaipur. ILA Bulletin, 2004; 40(4):31-34.

Original Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.6

Citation Errors in 'Libres: Library and Information Science Research e-Journal'

Vishnu Kumar Gupta

Abstract

This research was conducted to measure the citation errors in the research articles published in the *Libres: Library and Information Science Research e-Journal,* volume 26, issue 2, December, 2016. Sixty two journal citations were verified in details by classifying them into seven elements, viz. Author(s) Name, Article Title, Journal Name, Year, Volume No., Issue No., and Pages (both first and last page) and they were matched with the original articles. Non-journal citations were excluded from the study. Simple percentage analysis was employed by using percentage and frequency. Findings reveal that 63% (39) citations in *Libres* were inaccurate, while only 37% (23) citations were accurate. In 62 citations, a total of 50 errors were detected, out of which 18 were minor and 32 were major. A healthy mechanism is needed to maintain the reference accuracy as well as quality of the scholarly articles published in the *Libres* journal.

Keywords: Citation Errors; Reference Accuracy; Reference Lists; Libres: Library and Information Science Research e-Journal.

Introduction

The accurate summarizing of references is crucial in all kinds of scholarly communication. Inaccurate references can have severe aftermath, such as showing badly on the publishing journal, creating disbeliefs about the credibility of researchers, and impeding the retrieval of papers (Faunce & Job, 2001; Gupta, 2017a; Onwuegbuzie, Frels, & Slate, 2010; Spivey & Wilks, 2004).

Errors in reference lists create hurdles in various fields of research. One such hurdle described by Fenton et al. (2000) is that inaccurate references create distrust on the "capability and trustworthiness" of the author (p. 43). The best way to assure reference accuracy is to verify each and every reference from the original sources.

Author's Affiliation: Librarian, Department of Bioscience and Biotechnology Library, Banasthali University, Banasthali, Rajasthan 304022, India.

Reprint's Request: Vishnu Kumar Gupta, Librarian, Department of Bioscience and Biotechnology Library, Banasthali University, Banasthali, Rajasthan 304022, India.
E-mail: vishnu5966@gmail.com

Received on 21.11.2017, **Accepted on** 09.12.2017

Unquestionably, the "*Reference list*" which is embedded to a scholarly communication, is made from the previous studies, directly or indirectly consulted and referred by the researchers. It may also be considered as a yardstick for judging subject knowledge, reading habits and scholarship of the researchers. As an important segment of a scholarly communication, *Reference list* requires a top level accuracy along with its comprehensiveness. Preparation of *Reference list* and/or *Bibliography* is an art and demands perseverance and patience. The errors in such list act as a villain to further retrieval process of information sources. The technological developments, such as reference management tools and services, Citeseer, etc. have made convenient and easy to capture the details for compilation of a *Reference list*. The high level of reference accuracy, undoubtedly, makes the scholarly communication more reliable as well as useful and leads towards the high quality scholarship (Gupta, 2017b).

Due to citation errors, indexing of authors as well as journals in citation databases becomes complicated (Garfield, 1990). Garfield (1991) emphasized that "acknowledging prior research and intellectual debts is of crucial ethical importance" and invoked for the necessity preventively to teach young scholars on the research ethics incorporated in entire referencing (p. 14).

The *Libres: Library and Information Science Research e-Journal* is an international blind peer reviewed and refereed e-journal, which is being indexed in various indexing and abstracting databases, for example- ISA, LISA, EBSCO, Scopus & Cabells, and devoted to scholarly articles and research in Library and Information Science/Service (LIS). It appears twice a year in June and in December, and now jointly published by Wee Kim Wee School of Communication & Information and NTU Libraries, Nanyang Technological University, Singapore. The journal was earlier published by the Department of Information Studies, Curtin University Perth, Western Australia. In this journal, all articles are blind reviewed by at least 2 referees and the copyright of each *Libres* article is held by the author (s) of the article. *Libres* publishes mainly three types of articles, i.e. research paper reporting a completed study that advances the field or profession; synthesis paper that surveys an area of LIS to synthesize a new or better understanding; and opinion/perspectives paper that explores a new conception of an aspect of LIS in a scholarly way. The *Libres* follows the *American Psychological Association Publication Manual* for in-line citations and references. *Libres* journal does not accept the plagiarised articles.

So far there is no such study could be traced regarding the citation errors in references in *Libres* journal. Hence, this study was conducted to measure the citation errors in references in research articles published in *Libres* journal.

Review of Related Literature

Referencing correctly according to a given citation style guide is a prime responsibility of authors, since it protects them from charges of academic theft and plagiarism as well as it enhances the quality and maintains the credibility of both authors and articles. At all times, there is space for betterment in all human endeavours. Scholarly articles in the all field of knowledge are no exception. As expressed by Asai and Vickers (1995) "humans are born to make mistakes, but should never give up the attempt to conquer this tendency" (p. 1063).

Perhaps the citation errors in scholarly references have occurred since the scholars have begun quoting works of other scholars. When Frank Place, Jr. (1916) wrote about citation error as a very old problem almost hundred years ago. In his signature study, he critically pointed out that several esteemed scholars take "a reference from another's bibliography as though it were thereby Gospel truth itself" (p. 699).

Goodrich and Roland (1977), in their signature study, found that "among 2,195 reference citations published during 1975 in 10 major U.S. medical journals, 634 (29%) were found to be erroneous on direct checking of the original source." This work is considered as the earliest research in the reference accuracy field.

Boyce and Banning (1979) assessed the citation accuracy of 487 citations of the 1976 issues of the *Journal of the American Society for Information Science* and the *Personnel and Guidance Journal* and found 13.6% and 10.7% total errors, respectively. They categorized citation errors as incorrect author name, book/article title, journal title, wrong entry, and omission errors.

MacRoberts and MacRoberts (1986) determined overlooked research by investigating 15 papers on the "history of genetics," and showed that these 15 papers needed 719 references for sufficient coverage of earlier research; however, only 216 (30%) among these 719 were genuinely cited in their sample. Individual papers cited between zero and 64% of relevant references.

Accuracy of citations is necessary to the development of scholarly communications. Several other factor such as bibliometrics studies, citation analyses, document delivery services (DDS), interlibrary loan (ILL), evaluation of an author's work, database management, etc. may suffer by citation errors (Pandit, 1993). Accurate citations make easier all of these activities. Errors in citations squarely influence the output of citation and bibliometric studies. Yankauer (1990) defined citation error as, "errors of commission or omission in the printing of the reference" (p. 38). Pandit (1993), in a study entitled "*Citation Errors in Library Literature*," indicates that "errors focus on the citations themselves and exclude the extent to which authors correctly quoted a text or acknowledged an intellectual debt" (p. 185). According to Doms (1989), a correct or accurate reference is "one in which all included elements are identical to the source" (p. 442).

The citation errors of the journal *Canadian Journal of Anaesthesia* were reduced by 50% from 1990 to 1994 by demanding the contributors the photocopies of the only first page of each and every reference cited in 'Reference lists' (Asano, Mikawa, Nishina, Maekawa, & Obara, 1995).

Prakash Adhikari (2010**)** conducted a study to investigate the accuracy of 63 randomly selected references appended in papers published in the two different issues of *Indian Journal of Otolaryngology and Head & Neck Surgery* (IJOHNS), viz. December

2009, Volume 61 No. 4 and January 2010, Volume 62 No. 1. By splitting up references into 6 components, they were verified pin-pointedly, and compared with the original sources for accuracy. The references, which cited in the indexing journals, were considered for verification. About 70% references in IJOHNS were accurate, while rests (30%) were inaccurate. Errors in author's name were found in 11.1% references, whereas errors in journal's name were accounted in 6.3% of references.

Lee and Lin (2013) study on "citation errors in the masters' theses of the library and information science and information engineering," employed a small sample of references appended in 125 masters' level dissertations of the Tamkang University's Department of Computer Science and Information Engineering (DCSIE) and the Department of Information and Library Science (DILS) to compare citation errors in two different subjects. These masters' dissertations were submitted in the years 2007 and 2011. They also compared their citation error rates to the previous studies and found that their error rates were lower than others. This study indicated that out of 3564 citations verified, 70.8% (2527) citations were correct while 22.8% (813) were incorrect, and remaining 6.4% (224) citations were not verifiable by any sources.

Gupta (2017c) recently verified the accuracy of 118 citations appended in two Indian library and information science journals, viz. *Annals of Library and Information Studies* and *DESIDOC Journal of Library and Information Technology*. In this study, the average number of errors was 1.28. Out of 118 article's citations checked, only 33% (39) were correct while 67% (79) were incorrect. Among 79 inaccurate citations, there were 151 errors detected in which 53% (80) were minor errors and 47% (71) errors were major. Accurate citations enhance the credibility of the authors, manuscripts, and the journal. The bibliographical references are a major element of any scholarly publication. Reference accuracy is absolutely necessary for giving credit to the article, scholars and journal. This investigation revealed very low reference accuracy (i.e. 33%) in the two Indian library and information science journals. Total 19 errors were traced in citing author's name, out of which 8 were in ALIS and 11 in DJLIT. Eleven errors (2 in ALIS and 9 in DJLIT) in the titles were found in both the journals. Referencing errors in journal name were almost equal in both the journals, i.e. 8 errors in ALIS and 7 in DJLIT. The lists of errors in name of author (s), title, and journal are also provided. Errors in year and page number were accounting 4 and 5 in ALIS; and 2 and 15 in DJLIT, respectively. ALIS had more punctuation errors (48) compared to DJLIT (6). Inaccuracies in volume number were 2 in ALIS while DJLIT contained no error in volume number. Inaccuracies in issue number were 19 and 5 in ALIS and DJLIT, respectively. Honest efforts are needed to improve the quality of references by the researchers, reviewers and editors of the journals. They should follow the referencing instructions given by both the journals.

Objectives of the Study

The main objectives of the present study are:

1. To evaluate the number of errors in citations;
2. To evaluate the major and minor errors in citations;
3. To find out the accuracy level of citations;
4. To evaluate the errors in citing name of authors;
5. To evaluate the errors in article titles;
6. To evaluate the errors in journal name;
7. To evaluate the errors in year and page number; and
8. To evaluate the errors in volume and issue numbers.

Materials and Methods

This investigation was carried out to check the citation errors in the research articles published in the *Libres: Library and Information Science Research e-Journal,* volume 26, issue 2, December, 2016. A total of 62 journal citations were verified in details by classifying them into seven bibliographic elements, viz. Author (s) Name, Article Title, Journal Name, Year, Volume No., Issue No., and Pages (both first and last page) and they were matched with the original articles.

Non-journal citations, such as books, conference proceedings, patents, reports etc. were excluded from the study.

Cited journal articles were obtained from the Central Library of Banasthali University. Some articles were downloaded in PDF, html and other formats from the journal websites, online databases, and other aggregators' websites.

Doms' (1989) method was applied to categorize and analyze the errors in citations. He made two broad categories of all references as "correct or

incorrect." He defined both of them as "A correct reference was a reference that was identical to the source. An incorrect reference was a reference that deviated from the source" (p. 442). In his analytical study of five peer reviewed dental journals, errors "involved names or initials of authors, title of article, name of journal, volume number, year of publication, page numbers, punctuation, [and] spelling" (p. 442).

Journal citations which included a single error or more errors in one bibliographic element were treated as having one error; those which had errors in more than one bibliographic element were considered to have more than one error.

The major errors included the missing author(s) name, wrong/missing article title, wrong/missing journal name, wrong/missing year, wrong/missing volume number and issue number, and wrong/missing first page. The minor errors included errors in author name's initials, minor spelling errors in article title, minor errors in journal name, wrong/missing last page, and errors in punctuation marks.

Results

Simple percentage analysis was employed by using percentage and frequency. As shown in table 1 to 4, results reveal that out of 62 citations verified, 37% (23) citations were accurate while 63% (39) citations in *Libres* journal were inaccurate, which contained a total of 50 errors. Among these 50 errors, 18 were minor while 32 were major errors. Accuracy level of citations is 37.09%, while average number of errors in citations is 0.8. Highest errors were found in issue number 36% (18), followed by article title 22% (11). Issue number were found missing in 18 citations. Article titles were found to be incorrect in 11 citations while both author(s) name and journal name (either missing author(s)/initials or wrong initials or spelling errors or punctuation errors) were detected in 12% citations each. Citations with wrong year, wrong volume and wrong pages were accounted 4% (2), 4% (2), and 10% (5) respectively. Least common errors in citations were year (4%), and volume number (4%). A list of top 25 erroneous citations, for example are given in Table 5.

Table 1: Errors in citations

Journal	Total number of citations verified	Number of errors	Average number of errors
Libres	62	50	0.8

Table 2: Major and minor errors in citations

Journal	Total number of citations verified	Total number of errors	Major errors	Minor errors
Libres	62	50	32 (64%)	18 (36%)

Table 3: Accuracy level of citations

Journal	Total Number of Citations Verified	Correct citations	Incorrect citations	Reference accuracy
Libres	62	23 (37%)	39 (63%)	37.09%

Table 4: Frequency of citation errors in Libres

Citation elements	Type of errors	Frequency	Percentage
Author(s) name	Missing author(s)/initials	3	
	Extra author(s)/ initials	1	
	Spelling errors	1	
	Wrong initial	1	
	Total citations with author errors	6	12%
Article title	Word(s) addition/omission	2	
	Spelling errors	3	
	Punctuation errors	6	
	Total citations with title errors	11	22%
Journal name	Missing name	0	
	Incomplete name	4	
	Wrong name	1	
	Punctuation errors	1	
	Total citations with Journal errors	6	12%

Year	Missing	0	
	Wrong	2	
	Total citations with Year errors	2	4%
Volume no.	Missing	0	
	Wrong	2	
	Total citations with Volume errors	2	4%
Issue no.	Missing	18	
	Wrong	0	
	Total citations with Issue errors	18	36%
Pages	First Page- wrong	2	
	First Page- missing	0	
	Last Page- wrong	3	
	Last Page- missing	0	
	Total citations with page errors	5	10%
Total errors		50	100%

Average number of errors in citations is 50/62= 0.8

Table 5: Some important 25 examples of citation errors in Libres

1. Awan, M. R., & Mahmood, K. (2009). Relationship among leadership style, organizational culture and employee commitment in university libraries. *Library Management, 34*(4/5), 253-266.
2. Awan, M. R., & Mahmood, K. (2010). Relationship among leadership style, organizational culture and employee commitment in university libraries. *Library Management, 31*(4/5), 253-266. [Year and volume error]

1. Grant, D., & Michelson, G. (2005). Guest editorial: Discourse and organizational change. *Journal of Organizational Change Management, 18*(1), 6-15.
2. Grant, D., Michelson, G., Oswick, C., & Wailes, N. (2005). Guest editorial: Discourse and organizational change. *Journal of Organizational Change Management, 18*(1), 6-15. [Two authors missing]

1. Kaarst-Brown, M. L., Nicholson, S., Von Dran, G. M., & Stanton, J. M. (2004). Organizational culture of libraries as a strategic resource. *Library Trends*, *53*(1), 33-53.
2. Kaarst-Brown, M. L., Nicholson, S., Von Dran, G. M., & Stanton, J. M. (2004). Organizational cultures of libraries as a strategic resource. *Library Trends*, *53*(1), 33-53. [Spelling error in article title]

1. Kamenskaya, I. N. (2010). Organizational culture as a basis for the competitiveness of a library. *Scientific and Technical Information Processing, 38*(1), 27-33.
2. Kamenskaya, I. N. (2011). Organizational culture as a basis for the competitiveness of a library. *Scientific and Technical Information Processing, 38*(1), 27-33. [Year error]

1. Kumaresan, S. C., & Swarooprani, B. S. (2013). Measurement of organizational culture of higher educational libraries in Qatar using the competing values framework. *Journal of the Madras School of Social Work,7*(2),93-111.
2. Kumaresan, S. C., & Swaroop Rani, B. S. (2013). Measurement of organizational culture of higher educational libraries in Qatar using the competing values framework. *Journal of the Madras School of Social Work,7*(2),93-111. [Author name error]

1. Lakos, A., & Phipps, S. (2004). Creating a culture of assessment: A catalyst for organizational change. *Libraries and Academy, 4*(3), 345-361.
2. Lakos, A., & Phipps, S. (2004). Creating a culture of assessment: A catalyst for organizational change. *Portal: Libraries and the Academy*, *4*(3), 345-361. [Journal title error]

1. Linn, M. (2008). Organizational culture: An important factor to consider. *The Bottom Line, 2*(3), 88-93.
2. Linn, M. (2008). Organizational culture: An important factor to consider. *The Bottom Line*: *Managing Library Finances, 2*(3), 88-93. [Journal title error]

1. Oberg, D. (2009). Libraries in school: Essential contexts for studying organizational change and culture. *Library Trends, 58*(1), 9-25.
2. Oberg, D. (2009). Libraries in schools: Essential contexts for studying organizational change and culture. *Library Trends, 58*(1), 9-25. [Spelling error in article title]

1. Porumbeanu, O. (2010). Implementing knowledge management in Romanian academic libraries: Identifying the elements that characterize their organizational culture. *Journal of Academic Librarianship, 36*(6), 549-552.
2. Porumbeanu, O.-L. (2010). Implementing knowledge management in Romanian academic libraries: Identifying the elements that characterize their organizational culture. *Journal of Academic Librarianship, 36*(6), 549-552. [Author initial missing]

1. Shepstone, C., & Lyn, C. (2008). Transforming the academic library: Creating an organizational culture that fosters staff success. *The Journal of Academic Librarianship, 34*(4), 358-368.
2. Shepstone, C., & Currie, L. (2008). Transforming the academic library: Creating an organizational culture that fosters staff success. *The Journal of Academic Librarianship, 34*(4), 358-368. [Author name wrong]

1. Allen, M., Jacobs, S. K., & Levy, J. R. (2006). Mapping the literature of nursing 1996-2000. *Journal of the Medical Library Association, 94*(2) 206-220.
2. Allen, M., Jacobs, S. K., & Levy, J. R. (2006). Mapping the literature of nursing; 1996-2000. *Journal of the Medical Library Association, 94*(2) 206-220. [Punctuation error]

1. Assefa, S., & Rorissa, A. (2013). A bibliometric mapping on the structure of STEM education using co-word analysis. *Journal of the American Society for Information Science and Technology, 64*(12), 2513-2536.
2. Assefa, S.G., & Rorissa, A. (2013). A bibliometric mapping on the structure of STEM education using co-word analysis. *Journal of the American Society for Information Science and Technology, 64*(12), 2513-2536. [Author initial missing]

1. Barabási, A-L., & Albert, R. (1999). The emergence of scaling in random networks. *Science,286*, 797-817.
2. Barabási, A.-L., & Albert, R. (1999). Emergence of scaling in random networks. *Science, 286* (5439), 509-512. [Punctuation, word addition in title, issue no., first and last page errors]

1. Belter, C. W., & Seidel, D. J. (2013). A bibliometric analysis of climate engineering research. *WIREs Climate Change, 4*, 417-427.
2. Belter, C. W., & Seidel, D. J. (2013). A bibliometric analysis of climate engineering research. *WIREs Climate Change, 4*(5), 417-427. [Issue missing]

1. Cobo, M. J., López Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the Association for Information Science and Technology*, 62(7), 1382-1402.
2. Cobo, M. J., López Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology*, *62*(7), 1382-1402. [Journal title error]

1. Erdös, P., & Rényi, A. (1959). On random graphs, I. *Publicationes Mathematicae, 6*, 290-297.
2. Erdös, P., & Rényi, A. (1959). On random graphs I. *Publicationes Mathematicae Debrecen*, *6*, 290-297. [Journal title and punctuation error]

1. Garcia-Escartin, J. C., & Chamorro-Posada, P. (2013). Scouting the spectrum for interstellar travelers. *Acta Astronautica, 85*, 2-18.
2. Garcia-Escartin, J. C., & Chamorro-Posada, P. (2013). Scouting the spectrum for interstellar travellers. *Acta Astronautica, 85*, 12-18. [Spelling error in article title and first page error]

1. Hu, C-P., Hu, J. H., Deng, S-L., & Liu, Y. (2013). A co-word analysis of library and information science in China. *Scientometrics,* 97, 369-382.
2. Hu, C.-P., Hu, J. M., Deng, S.-L., & Liu, Y. (2013). A co-word analysis of library and information science in China. *Scientometrics, 97*(2), 369-382. [Author initial, punctuation, and issue error]

1. Jarrett, A. (2014). Reviews of science for science librarians: Ebola virus disease. *Science & Technology Libraries,* 33(4), 303-32.
2. Jarrett, A. (2014). Reviews of science for science librarians: Ebola virus disease. *Science & Technology Libraries,* 33(4), 303-321. [Last page error]

1. Milgram, S. (1967). The small world problem. *Psychology Today, 1*(1), 61-67.
2. Milgram, S. (1967). The small-world problem. *Psychology Today, 1*(1), 61-67. [Punctuation error]

1. Price, D. J. D. S. (1965). Networks of scientific papers. *Science* 149(3683) 510-515.
2. Price, D. J. D. S. (1965). Networks of scientific papers: The pattern of bibliographic references indicates the nature of the scientific research front. *Science, 149*(3683) 510-515. [Sub-title missing and punctuation error]

1. Watts, D. J., & Strogatz, S. H. (1998). Collective dynamics of "small-world" networks. *Nature*, 393(6684), 440-442.
2. Watts, D. J., & Strogatz, S. H. (1998). Collective dynamics of 'small-world' networks. *Nature*, *393*(6684), 440-442. [Punctuation error]

1. Kianifar, H., Sadeghi, R., & Zarifmahmoudi, L. (2014). Comparison between impact factor, Eigenfactor metrics, and SCImago Journal Rank indicator of pediatric neurology journals. *Acta Informatica Medica, 22*, 103-108.
2. Kianifar, H., Sadeghi, R., & Zarifmahmoudi, L. (2014). Comparison between impact factor, Eigenfactor metrics, and SCImago Journal Rank indicator of pediatric neurology journals. *Acta Informatica Medica, 22*(2), 103-106. [Issue and last page error]

1. Leydesdorff, L. (2009). How are new citation-based journal indicators adding to the bibliometric toolbox? *Journal of American Society of Information Science & Technology, 60*, 1327-1336.
2. Leydesdorff, L. (2009). How are new citation-based journal indicators adding to the bibliometric toolbox? *Journal of the American Society for Information Science & Technology, 60*(7), 1327-1336. [Journal title and issue error]

1. Rieder, S., Bruse, C. S., Michalski, C. W., Kleeff, J., & Friess, H. (2010). The impact factor ranking: A challenge for scientists and publishers. *Langenbeck's Archives of Surgery, 395*(Suppl. 1), S69-S73.
2. Rieder, S., Bruse, C. S., Michalski, C. W., Kleeff, J., & Friess, H. (2010). The impact factor ranking- A challenge for scientists and publishers. *Langenbecks Archives of Surgery, 395*(Suppl. 1), S69-S73. [Punctuation error]

The corrected element is underlined [1- uncorrected element, and 2- corrected element]

Conclusion

Needless to say, citations are an inevitable part of all kinds of scholarly communication. The goodwill of the scholars as well as the goodwill of the journals may negatively affect when scientific articles reporting citation errors are published. The authors are primarily responsible for citation errors, albeit their responsibilities are genuinely obvious. They read the original articles, cite them accurately in context, and report the references correctly.

The authors may send a cover letter along with the article manuscript assuring that all the references have been checked completely and verified with the original sources. The references should also be verified by the peer reviewers. The editors as well as the peer reviewers should not be treated citation errors lightly since they may push the reader to doubt the overall quality of research. A healthy mechanism is needed to maintain the reference accuracy as well as quality of the scholarly articles published in the *Libres* journal.

Source of Funding

No external funding was received in support for conducting this study.

ORCID: Vishnu Kumar Gupta *http://orcid.org/0000-0003-4579-7132.*

References

1. Adhikari, P. Accuracy of references in Indian Journal of Otolaryngology and Head & Neck Surgery. Indian Journal of Otolaryngology and Head & Neck Surgery, 2010;62(4):338-341. DOI: 10.1007/s12070-010-0048-y.
2. Asai T., & Vickers M.D. Citation errors- there is still much to be done [Correspondence]. Canadian Journal of Anaesthesia, 1995;42(11):1063.
3. Asano M., Mikawa K., Nishina K., Maekawa N., & Obara H. Improvement of the accuracy of references in the Canadian Journal of Anaesthesia. Canadian Journal of Anaesthesia, 1995;42(5):370-372. Retrieved from https://link.springer.com/content/pdf/10.1007/BF03015478.pdf.
4. Boyce B.R., & Banning C.S. Data accuracy in citation studies. Reference Quarterly, 1979;18(4):349-350.
5. Doms C.A. A survey of reference accuracy in five national dental journals, Journal of Dental Research, 1989;68(3):442-444.
6. Faunce G.J., & Job R.F.S. The accuracy of reference lists in five experimental psychology journals. American Psychologist, 2001;56(10):829-830. DOI: 10.1037//0003-066X.56.10.829.
7. Fenton J.E., Brazier H., De Souza A., Hughes J.P., & McShane D.P. The accuracy of citation and quotation in otolaryngology/head and neck surgery journals. Clinical Otolaryngology, 2000;25(1):40-44. DOI: 10.1046/j.1365-2273.2000.00322.x.
8. Garfield E. Journal editors awaken to the impact of citation errors. How we control them at ISI. Current Comments, 1990;13(41):367-375. Retrieved from http://www.garfield.library.upenn.edu/essays/v13p367y1990.pdf.
9. Garfield E. Bibliographic negligence: A serious transgression. Scientist, 1991;5(23):14.
10. Goodrich J.E., & Roland C.G. Accuracy of published medical reference citations. Journal of Technical Writing and Communication, 1977;7(1):15-19. DOI: 10.2190/2B2A-F34L-0TXG-WNQ7.
11. Gupta, V.K. Citation errors in scholarly communication: A critical evaluation. Indian Journal of Library and Information Science: An International Journal, 2017a;11(2):228-233. DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.11217.20.
12. Gupta V.K. Quality control through peer review process in scholarly communication: Review of related literature. IRA- International Journal of Management and Social Sciences, 2017b;8(3):248-255. DOI: http://dx.doi.org/10.21013/jmss.v8.n3.p3.
13. Gupta V.K. Accuracy of references in two Indian library and information science journals**.** Annals of Library and Information Studies, 2017c;64(3):181-189. Retrieved from http://nopr.niscair.res.in/bitstream/123456789/42986/1/ALIS%2064%283%29%20181-189.pdf.
14. http://www.libres-ejournal.info/about-libres/
15. Lee C.-J., & Lin W.-Y.C. Citation errors in the masters' theses of the library and information science and information engineering. Journal of Library and Information Studies, 2013;11(1):167-195. DOI: 10.6182./jlis.2013.11(1).167.
16. MacRoberts, M.H., & MacRoberts, B.R. Quantitative measures of communication in science: A study of the formal level. Social Studies of Science, 1986;16(1):151-172.
17. Onwuegbuzie, A.J., Frels, R.K., & Slate, J.R. Editorial: Evidence-based guidelines for avoiding the most prevalent and serious APA error in journal article submissions- the citation error. Research in the Schools, 2010;17(2):1-24.
18. Pandit, I. Citation errors in library literature: A study of five library science journals. Library & Information Science Research, 1993;15(2):185-198.

19. Place, F. Jr. Verify your references. A word to medical writers. New York Medical Journal, 1916;104(15): 697-699.

20. Spivey C.A., & Wilks S.E. Reference list accuracy in social work journals. Research on Social Work Practice, 2004;14(4):281-286. DOI: 10.1177/1049731503262131

21. Yankauer, A. The accuracy of medical journal references.CBE Views, 1990;13(2):38-42.

Review Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.7

User Persistence on Visiting Institutional Library

Puhap Lata Negi

Abstract

A user visits a library only when his/her purpose has been solved. Specifically, in Institutional Libraries, the users are students and faculty where the purpose of visit to library varies from one another. An attempt was made to find out the Users' persistence on visiting an institutional library by analysing separately the faculty members and students for different institutions specifically all R.I.E. libraries of India, a user visits library with multi purposes. So, for assessment of the purposes of use, a 5 - point scale was used for the survey where 5 is for very often to 1 for never. The respondents covering 1577 student users and 378 faculty users from all the R.I.E.s were asked to give their ratings against all the 23 identified purposes. Purposes of visiting to library by student users were found to be for preparing for project/ seminar, reading study books, Xerox of course materials, reading newspapers, magazines etc. and that for faculties are for reading newspapers and magazines, to find information for research, for preparing class notes, preparing for lecture, writing journal article and enhancing knowledge etc.

Keywords: Use of Library; Academic Library; Purpose of Visiting Library; Determination of Library Usefulness.

The purpose of visit to library varies from user to user. The purpose may be for preparing lecture or project or seminar, writing journal articles, getting general information, borrowing and returning of books, finding information for research, searching C.D. database and e-mail, for serious reading or reading personal materials or simply passing time by reading newspapers and magazines or preparing class notes. The average on the purposes for visiting library from a large sample of a particular category of users such as students or faculty members may not vary significantly but these are likely to vary significantly between the categories of users.

The purpose of visits to library is a persons' individual choice depending on his need and convenience, and the library as a unit seems to be have less influence over this. The physical facilities as well as the usefulness of materials may tend to affect them to certain degrees.

Hence, analysis has been made separately not only for the faculty members and students but separately for different institutions specifically all R.I.E. libraries of India, a user visits library with multi purposes. So, for assessment of the purposes of use, a 5 - point scale was used for the survey where 5 is for very often to 1 for never.

The respondents covering 1577 student users and 378 faculty users from all the R.I.E.s were asked to give their ratings against all the 23 identified purposes.

The Tables, 1 (a), (b), (c), (d), contain the results of the analysis on the students and faculty members of the four studied institutional (R.I.E.) libraries.

From the Tables 1 (a) to 1 (d), it is found that the percentage of students visiting the libraries with different purposes varies from around 20.0% to 90.0% in all the institutional (R.I.E.) libraries. Similarly, the percentage of faculty member users

Author's Affiliation: Librarian, Regional Institute of Education, NCERT , Bhubaneswar, Odisha 751022, India.

Reprint's Request: Puhap Lata Negi, Librarian, Regional Institute of Education, NCERT, Bhubaneswar, Odisha 751022, India.

E-mail: jnanendriya@gmail.com

Received on 27.11.2018, **Accepted on** 08.12.2018

Table. 1(a): Purpose of use of library by the students& Faculty of R.I.E., Ajmer library

Students - N = 286, Faculty - N=98

Sl. No	Purpose	For Students			For Faculty		
		Mean Score	S.D.	% of score	Mean Score	S.D.	% of score
1	To prepare for lecture	1.00	0.00	20.00	3.20	0.67	64.0
2	To prepare project / seminar	4.54	1.03	90.80	2.96	0.78	59.2
3	To write journal articles	1.68	1.12	33.60	3.23	1.09	64.6
4	To enhance knowledge	2.48	0.97	49.60	3.20	1.14	64.0
5	To browse different database	3.80	1.02	76.00	2.84	1.35	56.8
6	To write essay	2.10	0.99	42.00	2.80	1.12	56.0
7	To prepare for database completion	1.74	0.88	34.80	2.57	1.25	51.4
8	To write article on national programme	1.78	0.89	35.60	2.86	0.93	57.2
9	To study the text book	4.50	1.05	90.00	1.69	0.71	33.8
10	To make Xerox of course materials	4.41	1.12	88.20	3.08	0.88	61.6
11	To search CD database & e-mail	2.15	1.00	43.00	2.57	1.32	51.4
12	To borrow & return books	1.56	0.86	31.20	2.49	1.11	49.8
13	To get general information	2.76	1.16	55.20	3.04	0.90	60.8
14	To pass time	2.80	1.06	56.00	2.78	1.23	55.6
15	To prepare class notes	2.64	0.99	52.80	3.33	1.18	66.6
16	To read newspaper and magazine	4.32	1.11	86.40	3.94	0.87	78.8
17	To borrow & return non-fiction	1.00	0.00	20.00	1.12	0.39	22.4
18	To find information about employment	1.67	1.03	33.40	1.41	0.73	28.2
19	To prepare for competitive examination	2.37	1.01	47.40	1.22	0.54	24.4
20	To improve general knowledge	2.66	1.06	53.20	3.08	0.92	61.6
21	For serious reading	3.68	1.12	73.60	2.20	0.81	44.0
22	For reading personal materials	1.00	0.00	20.00	1.00	0.00	20.0
23	To find information for research	2.35	1.09	47.00	3.71	0.64	74.2

Table 1(b): Purpose of use of library by the Students& Faculty of R.I.E., Bhopal library

Students - N = 357, Faculty - N=111

Sl. No	Purpose	For Students			For Faculty		
		Mean Score	S.D.	% of score	Mean Score	S.D.	% of score
1	To prepare for lecture	1.12	0.61	22.4	3.02	0.82	60.4
2	To prepare project / seminar	4.57	0.80	91.4	2.78	0.86	55.6
3	To write journal articles	1.78	1.26	35.6	3.06	1.20	61.2
4	To enhance knowledge	2.58	1.01	51.6	3.03	1.24	60.6
5	To browse different database	3.90	0.79	78.0	2.62	1.34	52.4
6	To write essay	2.21	1.13	44.2	2.59	1.13	51.8
7	To prepare for database completion	1.84	1.09	36.8	2.41	1.26	48.2
8	To write article on national programme	1.88	1.09	37.6	2.68	0.98	53.6
9	To study the text book	4.59	0.75	91.8	1.56	0.56	31.2
10	To make Xerox of course materials	4.51	0.76	90.2	2.88	0.97	57.6
11	To search CD database & e-mail	2.24	1.11	44.8	2.38	1.32	47.6
12	To borrow & return books	1.77	1.13	35.4	2.31	1.10	46.2
13	To get general information	2.87	1.08	57.4	2.86	0.99	57.2
14	To pass time	2.90	0.89	58.0	2.61	1.27	52.2
15	To prepare class notes	2.74	0.94	54.8	3.15	1.31	63.0
16	To read newspaper and magazine	4.38	0.82	87.6	3.77	1.11	75.4
17	To borrow & return non-fiction	1.13	0.62	22.6	1.21	0.52	24.2
18	To find information about employment	1.89	1.27	37.8	1.36	0.65	27.2
19	To prepare for competitive examination	2.47	1.08	49.4	1.14	0.39	22.8
20	To improve general knowledge	2.76	1.02	55.2	2.89	1.02	57.8
21	For serious reading	3.78	0.91	75.6	2.06	0.77	41.2
22	For reading personal materials	1.13	0.62	22.6	1.05	0.21	21.0
23	To find information for research	2.46	1.17	49.2	3.55	0.91	71.0

Table 1(c): Purpose of use of library by the Students& Faculty of R.I.E., Bhubaneswar library

Students - N = 582, Faculty - N=86

Sl. No	Purpose	For Students			For Faculty		
		Mean Score	S.D.	% of score	Mean Score	S.D.	% of score
1	To prepare for lecture	1.09	0.50	21.8	3.02	0.81	60.4
2	To prepare project / seminar	4.59	0.77	91.8	2.76	0.85	55.2
3	To write journal articles	1.75	1.23	35.0	3.01	1.18	60.2
4	To enhance knowledge	2.55	0.99	51.0	3.02	1.22	60.4
5	To browse different database	3.87	0.82	77.4	2.66	1.37	53.2
6	To write essay	2.17	1.10	43.4	2.60	1.16	52.0
7	To prepare for database completion	1.81	1.06	36.2	2.40	1.23	48.0
8	To write article on national programme	1.85	1.06	37.0	2.66	0.96	53.2
9	To study the text book	4.57	0.75	91.4	1.70	0.92	34.0
10	To make Xerox of course materials	4.48	0.82	89.6	2.94	1.05	58.8
11	To search CD database & e-mail	2.21	1.09	44.2	2.45	1.38	49.0
12	To borrow & return books	1.71	1.10	34.2	2.29	1.08	45.8
13	To get general information	2.83	1.07	56.6	2.93	1.09	58.6
14	To pass time	2.86	0.88	57.2	2.59	1.25	51.8
15	To prepare class notes	2.70	0.92	54.0	3.13	1.30	62.6
16	To read newspaper and magazine	4.39	0.79	87.8	3.74	1.11	74.8
17	To borrow & return non-fiction	1.06	0.43	21.2	1.27	0.74	25.4
18	To find information about employment	1.99	1.30	39.8	1.50	0.99	30.0
19	To prepare for competitive examination	2.44	1.06	48.8	1.38	0.88	27.6
20	To improve general knowledge	2.73	1.02	54.6	2.88	1.02	57.6
21	For serious reading	3.75	0.94	75.0	2.17	1.06	43.4
22	For reading personal materials	1.08	0.45	21.6	1.42	1.09	28.4
23	To find information for research	2.42	1.15	48.4	3.52	0.90	70.4

Table 1(d): Purpose of use of library by the Students& Faculty of R.I.E., Mysore library

Students - N = 352, Faculty - N=83

Sl. No	Purpose	For Students			For Faculty		
		Mean Score	S.D.	% of score	Mean Score	S.D.	% of score
1	To prepare for lecture	1.13	0.63	22.6	3.06	0.68	61.2
2	To prepare project / seminar	4.48	0.90	89.6	2.77	0.70	55.4
3	To write journal articles	1.81	1.27	36.2	3.06	1.09	61.2
4	To enhance knowledge	2.61	0.98	52.2	3.05	1.14	61.0
5	To browse different database	3.92	0.79	78.4	2.66	1.29	53.2
6	To write essay	2.24	1.11	44.8	2.63	1.06	52.6
7	To prepare for database completion	1.87	1.10	37.4	2.39	1.14	47.8
8	To write article on national programme	1.91	1.10	38.2	2.69	0.87	53.8
9	To study the text book	4.52	0.82	90.4	1.82	0.83	36.4
10	To make Xerox of course materials	4.49	0.83	89.8	2.97	0.93	59.4
11	To search CD database & e-mail	2.28	1.10	45.6	2.40	1.23	48.0
12	To borrow & return books	1.79	1.13	35.8	2.31	0.97	46.2
13	To get general information	2.89	1.05	57.8	3.00	0.99	60.0
14	To pass time	2.93	0.86	58.6	2.59	1.16	51.8
15	To prepare class notes	2.76	0.90	55.2	3.14	1.19	62.8
16	To read newspaper and magazine	4.34	0.88	86.8	3.77	1.00	75.4
17	To borrow & return non-fiction	1.13	0.63	22.6	1.35	0.85	27.0
18	To find information about employment	1.87	1.31	37.4	1.58	0.96	31.6
19	To prepare for competitive examination	2.49	1.06	49.8	1.49	0.98	29.8
20	To improve general knowledge	2.79	1.00	55.8	2.91	0.90	58.2
21	For serious reading	3.81	0.86	76.2	2.20	0.88	44.0
22	For reading personal materials	1.13	0.63	22.6	1.34	0.98	26.8
23	To find information for research	2.48	1.15	49.6	3.53	0.75	70.6

vary from around 20.0% to 75.0% against the 23 identified purposes for visiting library. Further, from the analysis, it is found that the main purpose of the student users visiting the library in order of preference are for preparing projects/seminars, for studying the study books, to get Xerox of course materials, for reading newspapers and magazines. From the analysis of the purpose of visit to library by

Table 1(e): Correlation matrix among users of the four R.I.E. libraries

Users → / ↓	Student Ajmer	Student Bhopal	Student Bhuban-eswar	Student Mysore	Faculty Ajmer	Faculty Bhopal	Faculty Bhuban-eswar	Faculty Mysore
Student Ajmer	1.0	-	-	-	-	-	-	-
Student Bhopal	0.99	1.0	-	-	-	-	-	-
Student BBSR	0.99	0.94	1.0	-	-	-	-	-
Student Mysore	0.98	0.99	0.99	1.0	-	-	-	-
Faculty Ajmer	0.32	-	-	-	1.0	-	-	-
Faculty Bhopal	-	0.29	-	-	0.99	1.0	-	-
Faculty BBSR	-	-	0.30	-	0.99	0.99	1.0	-
Faculty Mysore	-	-	-	0.33	0.99	0.97	0.98	1.0

the faculty members, it is found that the main purposes in order of preference are for reading newspapers and magazines, to find information for research, for preparing class notes, preparing for lecture, for writing journal articles and to enhance knowledge.

The collections of the libraries both qualitative and quantitative, are likely to influence the users purpose of visit to library to some extent as both the categories of users i.e., students and faculty members are from the same institutions and the above aspects become known to them gradually with the passing of time. However, the purpose of visit to libraries by a single category of user tend to be similar in all the institutions as their collections as well as physical facilities have less variations which may be due to the facts that they are contemporary and run by the Government. In order to find out the extent of co-relationship among the categories of users between the institutional libraries, co-relationship study was made, the results of which are as contained in Table 1(e).

From the table 1 (e), it is found that the purpose of visit to library by the same category of users i.e. the students or the faculty members between different institutional (R.I.E.) libraries are highly and positively correlated to the extent varying from 0.94 to 0.99 and between the categories i.e., student and faculty members of the same library are although positively but feebly related varying from 0.29 to 0.33. In the Table 1 (e), the coefficient of correlation between the heterogeneous users i.e., faculty members and students of the same institutional (R.I.E.) libraries are found out due to the logic of comparison, not between different libraries since there is some chance of the influence of the usefulness of available collections and physical facilities may be there.

It is therefore inferred that the purposes of visit to library between the student users are almost similar irrespective of the libraries, and so also the case of the faculties. But, the purposes of visit to library by the students are quite different than that of the faculties.

1. The main purpose of visit to library by student users in order of preference are preparing for project/ seminar, reading study books, Xerox of course materials, reading newspapers and magazines.
2. The main purpose of visit to library by the faculty members in order of preference are for reading newspapers and magazines, to find information for research, for preparing class notes, preparing for lecture, writing journal article and enhancing knowledge.
3. There exists significant difference in the purpose of visit to libraries between the faculty members and students.
4. The purpose of visit to library by the students is similar irrespective of the institution they belong to. Similar is the case of faculty members also.

Reference

1. Doraswamy, M. Information seeking behaviour and satisfaction towards library resources by the faculty members: A study of Siddhartha educational institutions, Vijayawada. International journal of Library and Information Management, 2011;2(2):1-8.
2. Zhang, L. Survey on the utilization of NSTL electronic resources in colleges and universities in Wuhan, China. The Electronic Library, 2011;29(6):828-840.
3. Kannapanavar, B.U. & Manjunatha, K.V. Library use pattern by the faculty members of the engineering colleges in Karnataka: A study. International Journal of Library and Information Science, 2010;2(8):155-163.
4. Park, Ji-Hong. Differences among university students and faculties in social networking site perception and use: Implications for academic library services. The Electronic Library, 2010;28(3):417-431.

5. Shuling, W. Investigation and analysis of current use of electronic resources in university libraries. Library Management, 2006;28(1):72-88.
6. Whitmire, Ethelene. Academic library performance measures and undergraduates' library use and educational outcomes. Library & Information Science Research, 2002;24(2):107-128.
7. Rader, M.B. Academic library user education in China. Reference Services Review, 1999;27(1):69-71.
8. Bruce, H. User satisfaction with information seeking on the internet. Journal of the American Society for Information Science and Technology, 1998;49(6): 541-556.

Review Article

Indian Journal of Library and Information Science
Volume 12 Number 1, January - April 2018
DOI: http://dx.doi.org/10.21088/ijlis.0973.9548.12118.8

Relevance of E-Books in MJP Rohilkhand University, Bareilly

Subhash Chandra

Abstract

In higher education, universities play a pivotal role in the development of academic community. In this context, the University Libraries have emerged as the hub of learning for higher education and provide facilities for research and specialization. E-resources are necessary in the present ICT era. In the present study an attempt has been made to describe the status, importance, etc. of e-books in M.J.P. Rohilkhand University, Bareilly.

Keywords: E-Books; Internet; ICT.

Introduction

The development of the internet has led to the adding of a lot of concepts starting with "e-"to our lives. E-mail, e-shopping, e-banking, e-commerce, e-government, e-signatures and e-learning are leading concepts among them. E-books with growing reader/ user population are a book format that most of us have heard and used a lot lately because of their long-standing history and the widespread use of information technologies.

An electronic book (or e-book) is a book publication made available in digital form, consisting of text, images, or both, readable on the flat-panel display of computers or other electronic devices. Although sometimes defined as "an electronic version of a printed book", some e-books exist without a printed equivalent. Commercially produced and sold e-books are usually intended to be read on dedicated e-reader devices. However, almost any sophisticated computer device that features a controllable viewing screen can also be used to read e-books, including desktop computers, laptops, tablets and smart phones [1].

Author's Affiliation: Assistant Librarian, M.J.P. Rohilkhand University, Bareilly, Uttar Pradesh 243006, India.

Reprint's Request: Subhash Chandra, Asst. Librarian, M.J.P. Rohilkhand University, Bareilly, Uttar Pradesh 243006, India.
E-mail: s73chandra@rediffmail.com

Received on 14.12.2017, **Accepted on** 18.01.2018

MJP Rohilkhand University

Rohilkhand University was established in 1975 as an affiliating university. It was carved out of the then Agra University. There was a dire need to establish a separate university since the region has a lower literacy rate than the national average. The status was upgraded to affiliating-cum-residential university in 1985 when four teaching departments were established in the campus. In 1987 three more departments were added. In August 1997 Rohilkhand University was renamed as Mahatma Jyotiba Phule Rohilkhand University. The university imparts non-conventional, professional and technical education through its network of colleges and institutes. The university has taken an overall perspective of development plan and thereby modified university status by including new Faculties of Engineering and Technology, Management, Applied Sciences, Education and Allied Sciences, etc. The existing faculties in the university are Advanced Social Sciences, Applied Sciences, Education, Agriculture, Education & Allied Sciences, Arts, Commerce, Dental Sciences, Engineering & Technology, Law, Management and Sciences. The university headquarter is located at Bareilly with its territorial jurisdiction extending over the districts of Bareilly, Moradabad, Rampur, Bijnore, Jyotibaphule Nagar, Baduan, Pilibhit and Shahjahanpur. The university campus spreads over 206 acre of land. The Campus possesses

administrative building, faculty buildings, central library, multipurpose hall, hostel for boys & girls, staff quarter for vice-chancellor and other officers of the university, faculty members, non-teaching staff, guest house, sports complex, medical center etc. The senior faculty members of different disciplines in Humanities, Science and Technology are running research projects funded by various agencies and so far 65 projects funded by UGC, AICTE, DST, CST, ICAR, ICHR, MIF have been completed. Teachers of the affiliated college are also engaged in research projects funded by above agencies. In tune with the goals of the university the different departments of the campus have framed their objectives for keeping pace with the national and international educational scenario [2].

Central Library

With the establishment of university in 1975, an idea of a central library also emerged. But it could be actualized only after the university attained its residential character in 1985 and thus central library came into existence in a rudimentary form in the administrative block. In 1989, the then vice-chancellor Dr. B. B. Singh Bisen took an initiative to differentiate the library from other offices of the administrative block and appointed an O.S.D. especially for the library. Later on, it was decided that separate building for the library may be constructed. On 29th Nov. 1994 the then Chairman of UGC Prof. G. Ram Reddy laid the foundation stone of library building and on completion it was inaugurated by the then Governor and Chancellor of U.P. Shri Romesh Bhandari on 13th Feb. 1997. With the rapid development of the university, library needed much more space therefore the then vice-chancellor Prof. Z.H. Zaidi took necessary step in 2003 for the expansion of building. The expanded portion was completed in 2005 and was inaugurated by the then Vice President of India Shri Bhairon Singh Shekhavat on 04th Feb. 2005. Besides the central library there are also two departmental libraries; one is in the Institute of Engineering and Technology and second is in the Faculty of Education and Allied Sciences. The central library is being administered by Hon. Librarian with the help of Assistant Librarian and twelve supporting staff. The main sections of library are Acquisition/Processing Section, Theses/ Dissertations Section, Journals/Periodicals Section, Newspapers/Magazines Section, Stack Room, Reading Room and Computer Room. The main sources of funds are UGC grant, university fund, overdue charges, etc. Ministry of Social Welfare, U.P. govt. also donates the books for the SC/ST students. The collections of library are 93842 Books (text/ reference on Animal Science, Plant Science, Engineering, Education, Literature, History, Management, Law, Economics and general interest), 1849 back/bound volumes of Journals, 6790 Theses/ Dissertations and 567 CD's (audio/video). Currently 102 print (75 Indian and 27 Foreign) and 1390 on-line Journals are being subscribed. Internet facility is also available for the users. Library opens at 8:00 am to 8:00 pm excluding Sundays and gazetted/ university holidays. The library is in process to computerize the complete services relating to the users [3].

E-books in Central Library

In order to strengthen the services of central library, e-books facility was introduced in the year 2015-16. At that time 728 titles of e-books (15 of Animal Science, 28 of Chemistry, 113 0f Engineering & Technology, 32 of Education, 9 of History, 21 of Hotel Management, 4 of Journalism & Mass Communication, 35 of Law, 34 of Mathematics, 5 of Philosophy, 31 of Physics, 31 of Psychology, 28 of Social Work and 343 of Management) were procured which are available (for teachers/students) on-line through IP address of the university. These e-books may be access at www.lib.myilibrary.com. In near future the library is planning to procurement of new e-books on different subjects which are running in university campus and its affiliated colleges.

Relevance of e-books

The e-books may be relevant in a university library through many ways. Some of them are as under:-

1. Interactivity - Students loved the way e-books provide practically endless opportunities for interaction, ranging from simple websites to exchanges with authors.
2. Access - Students appreciated the fact that e-books provide access to reading anytime, anywhere.
3. Vocabulary - The e-book makes it easier to learn new words, for example, by clicking on a word to view its definition.
4. Note Taking - Students enjoyed the many ways to annotate texts, audio, and video using a variety of apps.
5. Search - The e-book allows readers to find words and phrases rapidly.
6. Reading Aloud - The Voice Over function available on certain tablets is helpful for young children learning to read or with reading problems.

7. Individualization - The e-book offers invaluable benefits for students with learning problems, including tailored content (e.g., supplemental pages or sections).
8. Learning - Numerous studies have demonstrated the cognitive potential (i.e., increased learning) of the e-book, particularly for textbooks.
9. Updates - The e-book allows publishers to continuously update content.
10. Frequency - Students wanted to read e-books more often than traditional paper books.
11. Duration - Students spent more time reading e-books than paper books.
12. Organization - Students reported that e-books and e-texts were easier to organize and prioritize.
13. All in One Place - Students repeatedly stressed the practicality of reading on a tablet, where everything is in one place: dictionary, search engine, images, sound, etc.
14. Variety - Students could readily access a wide variety of books and texts, and teachers regarded the tablets as a kind of world-scale library.
15. Quantity - The most recent tablets can contain over 50,000 books, more than anyone can read in a lifetime.
16. Interest - Students found reading e-books more interesting than regular books.
17. Multimedia - The multimedia content (images, sound, video) appealed to students and inspired them to read.
18. Enjoyment - Overall, students enjoyed reading e-books more than regular books.
19. Adaptation - The e-book allows many ways of tailoring content for young readers: luminosity, font style, etc.
20. Sharing - Students can easily share what they are reading with others. More and more apps allow sharing comments and highlighted sections via social networks.
21. Networking - Students found it easy to share ideas about common projects.
22. Collaboration - Students could collaborate in real time with their classmates when reading texts.
23. Savings - Schools can cut costs substantially over the medium term by introducing e-books.
24. Ecology - The e-book has a lower environmental impact.
25. Portability - Studies have shown that carrying heavy textbooks on a daily basis can negatively affect students' health.

Summing-up

From the above discussion we can say that the e-books are much useful for the users in many ways. Each and every institution may be introducing the e-books on priority basis for its users. The future of e-books is much bright.

References

1. https://en.wikipedia.org/wiki/E-book accessed on 05.11.2017.
2. www.mjpru.ac.in accessed on 02.11.2017.
3. www.mjpru.ac.in/central_library.html accessed on 02.11.2017.

Guidelines for Authors

Manuscripts must be prepared in accordance with "Uniform requirements for Manuscripts submitted to Biomedical Journal" developed by international committee of medical Journal Editors.

Types of Manuscripts and Limits

Original articles: Up to 3000 words excluding references and abstract and up to 10 references.

Review articles: Up to 2500 words excluding references and abstract and up to 10 references.

Case reports: Up to 1000 words excluding references and abstract and up to 10 references.

Online Submission of the Manuscripts

Articles can also be submitted online from http://rfppl.co.in/customer_index.php.

I) First Page File: Prepare the title page, covering letter, acknowledgement, etc. using a word processor program. All information which can reveal your identity should be here. use text/rtf/doc/PDF files. Do not zip the files.

2) Article file: The main text of the article, beginning from Abstract till References (including tables) should be in this file. Do not include any information (such as acknowledgement, your name in page headers, etc.) in this file. Use text/rtf/doc/PDF files. Do not zip the files. Limit the file size to 400 Kb. Do not incorporate images in the file. If file size is large, graphs can be submitted as images separately without incorporating them in the article file to reduce the size of the file.

3) Images: Submit good quality color images. Each image should be less than 100 Kb in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to 400 pixels or 3 inches). All image formats (jpeg, tiff, gif, bmp, png, eps etc.) are acceptable; jpeg is most suitable.

Legends: Legends for the figures/images should be included at the end of the article file.

If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks from submission. Hard copies of the images (3 sets), for articles submitted online, should be sent to the journal office at the time of submission of a revised manuscript. Editorial office: Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi – 110 091, India, Phone: 91-11-22754205, 45796900, 22756995. E-mail: author@rfppl.co.in. Submission page: http://rfppl.co.in/article_submission_system.php?mid=5.

Preparation of the Manuscript

The text of observational and experimental articles should be divided into sections with the headings: Introduction, Methods, Results, Discussion, References, Tables, Figures, Figure legends, and Acknowledgment. Do not make subheadings in these sections.

Title Page

The title page should carry

1) Type of manuscript (e.g. Original article, Review article, Case Report)
2) The title of the article, should be concise and informative;
3) Running title or short title not more than 50 characters;
4) The name by which each contributor is known (Last name, First name and initials of middle name), with his or her highest academic degree(s) and institutional affiliation;
5) The name of the department(s) and institution(s) to which the work should be attributed;
6) The name, address, phone numbers, facsimile numbers and e-mail address of the contributor responsible for correspondence about the manuscript; should be mentoined.
7) The total number of pages, total number of photographs and word counts separately for abstract and for the text (excluding the references and abstract);
8) Source(s) of support in the form of grants, equipment, drugs, or all of these;
9) Acknowledgement, if any; and
l0) If the manuscript was presented as part at a meeting, the organization, place, and exact date on which it was read.

Abstract Page

The second page should carry the full title of the manuscript and an abstract (of no more than 150 words for case reports, brief reports and 250 words for original articles). The abstract should be structured and state the Context (Background), Aims, Settings and Design, Methods and Materials, Statistical analysis used, Results and Conclusions. Below the abstract should provide 3 to 10 keywords.

Introduction

State the background of the study and purpose of the study and summarize the rationale for the study or observation.

Methods

The methods section should include only information that was available at the time the plan or protocol for the study was written such as study approach, design, type of sample, sample size, sampling technique, setting of the study, description of data collection tools and methods; all information obtained during the conduct of the study belongs in the Results section.

Reports of randomized clinical trials should be based on the CONSORT Statement (http://www.consort-statement. org). When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 2000 (available at http://www.wma.net/e/policy/l 7-c_e.html).

Results

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical details can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

Discussion

Include summary of key findings (primary outcome measures, secondary outcome measures, results as they relate to a prior hypothesis); Strengths and limitations of the study (study question, study design, data collection, analysis and interpretation); Interpretation and implications in the context of the totality of evidence (is there a systematic review to refer to, if not, could one be reasonably done here and now?, What this study adds to the available evidence, effects on patient care and health policy, possible mechanisms)? Controversies raised by this study; and Future research directions (for this particular research collaboration, underlying mechanisms, clinical research). Do not repeat in detail data or other material given in the Introduction or the Results section.

References

List references in alphabetical order. Each listed reference should be cited in text (not in alphabetic order), and each text citation should be listed in the References section. Identify references in text, tables, and legends by Arabic numerals in square bracket (e.g. [10]). Please refer to ICMJE Guidelines (http://www.nlm.nih.gov/bsd/uniform_requirements.html) for more examples.

Standard journal article

[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.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003; 61: 347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone iodine antisepsis. State of the art. Dermatology 1997; 195 Suppl 2: 3-9.

Corporate (collective) author

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

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O, Kidd EAM,

editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

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.

More information about other reference types is available at www.nlm.nih.gov/bsd/uniform_requirements.html, but observes some minor deviations (no full stop after journal title, no issue or date after volume, etc).

Tables

Tables should be self-explanatory and should not duplicate textual material.

Tables with more than 10 columns and 25 rows are not acceptable.

Table numbers should be in Arabic numerals, consecutively in the order of their first citation in the text and supply a brief title for each.

Explain in footnotes all non-standard abbreviations that are used in each table.

For footnotes use the following symbols, in this sequence: *, ¶, †, ‡‡,

Illustrations (Figures)

Graphics files are welcome if supplied as Tiff, EPS, or PowerPoint files of minimum 1200x1600 pixel size. The minimum line weight for line art is 0.5 point for optimal printing.

When possible, please place symbol legends below the figure instead of to the side.

Original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay.

Type or print out legends (maximum 40 words, excluding the credit line) for illustrations using double spacing, with Arabic numerals corresponding to the illustrations.

Sending a revised manuscript

While submitting a revised manuscript, contributors are requested to include, along with single copy of the final revised manuscript, a photocopy of the revised manuscript with the changes underlined in red and copy of the comments with the point to point clarification to each comment. The manuscript number should be written on each of these documents. If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks of submission. Hard copies of images should be sent to the office of the journal. There is no need to send printed manuscript for articles submitted online.

Reprints

Journal provides no free printed reprints, however a author copy is sent to the main author and additional copies are available on payment (ask to the journal office).

Copyrights

The whole of the literary matter in the journal is copyright and cannot be reproduced without the written permission.

Declaration

A declaration should be submitted stating that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under the present authorship has been published or is being considered for publication elsewhere and the authorship of this article will not be contested by any one whose name (s) is/are not listed here, and that the order of authorship as placed in the manuscript is final and accepted by the co-authors. Declarations should be signed by all the authors in the order in which they are mentioned in the original manuscript. Matters appearing in the Journal are covered by copyright but no objection will be made to their reproduction provided permission is obtained from the Editor prior to publication and due acknowledgment of the source is made.

Approval of Ethics Committee

We need the Ethics committee approval letter from an Institutional ethical committee (IEC) or an institutional review board (IRB) to publish your Research article or author should submit a statement that the study does not require ethics approval along with evidence. The evidence could either be consent from patients is available and there are no ethics issues in the paper or a letter from an IRB stating that the study in question does not require ethics approval.

Abbreviations

Standard abbreviations should be used and be spelt out when first used in the text. Abbreviations should not be used in the title or abstract.

Checklist

- Manuscript Title
- Covering letter: Signed by all contributors
- Previous publication/ presentations mentioned, Source of funding mentioned
- Conflicts of interest disclosed

Authors

- Middle name initials provided.
- Author for correspondence, with e-mail address provided.
- Number of contributors restricted as per the instructions.
- Identity not revealed in paper except title page (e.g.name of the institute in Methods, citing previous study as 'our study')

Presentation and Format

- Double spacing
- Margins 2.5 cm from all four sides
- Title page contains all the desired information. Running title provided (not more than 50 characters)
- Abstract page contains the full title of the manuscript
- Abstract provided: Structured abstract provided for an original article.
- Key words provided (three or more)
- Introduction of 75-100 words
- Headings in title case (not ALL CAPITALS). References cited in square brackets
- References according to the journal's instructions

Language and grammar

- Uniformly American English
- Abbreviations spelt out in full for the first time. Numerals from 1 to l0 spelt out
- Numerals at the beginning of the sentence spelt out

Tables and figures

- No repetition of data in tables and graphs and in text.
- Actual numbers from which graphs drawn, provided.
- Figures necessary and of good quality (color)
- Table and figure numbers in Arabic letters (not Roman).
- Labels pasted on back of the photographs (no names written)
- Figure legends provided (not more than 40 words)
- Patients' privacy maintained, (if not permission taken)
- Credit note for borrowed figures/tables provided
- Manuscript provided on a CDROM (with double spacing)

Submitting the Manuscript

- Is the journal editor's contact information current?
- Is the cover letter included with the manuscript? Does the letter:

1. Include the author's postal address, e-mail address, telephone number, and fax number for future correspondence?
2. State that the manuscript is original, not previously published, and not under concurrent consideration elsewhere?
3. Inform the journal editor of the existence of any similar published manuscripts written by the author?
4. Mention any supplemental material you are submitting for the online version of your article. Contributors' Form (to be modified as applicable and one signed copy attached with the manuscript)

Revised Rates for 2018 (Institutional)

Title	Frequency	Rate (Rs): India		Rate ($):ROW	
Community and Public Health Nursing	Triannual	5500	5000	430	391
Dermatology International	Semiannual	5500	5000	430	391
Gastroenterology International	Semiannual	6000	5500	469	430
Indian Journal of Agriculture Business	Semiannual	5500	5000	413	375
Indian Journal of Anatomy	Bi-monthly	8500	8000	664	625
Indian Journal of Ancient Medicine and Yoga	Quarterly	8000	7500	625	586
Indian Journal of Anesthesia and Analgesia	Monthly	7500	7000	586	547
Indian Journal of Biology	Semiannual	5500	5000	430	391
Indian Journal of Cancer Education and Research	Semiannual	9000	8500	703	664
Indian Journal of Communicable Diseases	Semiannual	8500	8000	664	625
Indian Journal of Dental Education	Quarterly	5500	5000	430	391
Indian Journal of Emergency Medicine	Quarterly	12500	12000	977	938
Indian Journal of Forensic Medicine and Pathology	Quarterly	16000	15500	1250	1211
Indian Journal of Forensic Odontology	Semiannual	5500	5000	430	391
Indian Journal of Genetics and Molecular Research	Semiannual	7000	6500	547	508
Indian Journal of Hospital Administration	Semiannual	7000	6500	547	508
Indian Journal of Hospital Infection	Semiannual	12500	12000	938	901
Indian Journal of Law and Human Behavior	Semiannual	6000	5500	469	430
Indian Journal of Legal Medicine	Semiannual				
Indian Journal of Library and Information Science	Triannual	9500	9000	742	703
Indian Journal of Maternal-Fetal & Neonatal Medicine	Semiannual	9500	9000	742	703
Indian Journal of Medical & Health Sciences	Semiannual	7000	6500	547	508
Indian Journal of Obstetrics and Gynecology	Bi-monthly	9500	9000	742	703
Indian Journal of Pathology: Research and Practice	Monthly	12000	11500	938	898
Indian Journal of Plant and Soil	Semiannual	65500	65000	5117	5078
Indian Journal of Preventive Medicine	Semiannual	7000	6500	547	508
Indian Journal of Research in Anthropology	Semiannual	12500	12000	977	938
Indian Journal of Surgical Nursing	Triannual	5500	5000	430	391
Indian Journal of Trauma & Emergency Pediatrics	Quarterly	9500	9000	742	703
Indian Journal of Waste Management	Semiannual	9500	8500	742	664
International Journal of Food, Nutrition & Dietetics	Triannual	5500	5000	430	391
International Journal of Neurology and Neurosurgery	Quarterly	10500	10000	820	781
International Journal of Pediatric Nursing	Triannual	5500	5000	430	391
International Journal of Political Science	Semiannual	6000	5500	450	413
International Journal of Practical Nursing	Triannual	5500	5000	430	391
International Physiology	Triannual	7500	7000	586	547
Journal of Animal Feed Science and Technology	Semiannual	78500	78000	6133	6094
Journal of Cardiovascular Medicine and Surgery	Quarterly	10000	9500	781	742
Journal of Forensic Chemistry and Toxicology	Semiannual	9500	9000	742	703
Journal of Geriatric Nursing	Semiannual	5500	5000	430	391
Journal of Global Public Health	Semiannual				
Journal of Microbiology and Related Research	Semiannual	8500	8000	664	625
Journal of Nurse Midwifery and Maternal Health	Triannual	5500	5000	430	391
Journal of Organ Transplantation	Semiannual	26400	25900	2063	2023
Journal of Orthopaedic Education	Triannual	5500	5000	430	391
Journal of Pharmaceutical and Medicinal Chemistry	Semiannual	16500	16000	1289	1250
Journal of Practical Biochemistry and Biophysics	Semiannual	7000	6500	547	508
Journal of Psychiatric Nursing	Triannual	5500	5000	430	391
Journal of Social Welfare and Management	Triannual	7500	7000	586	547
New Indian Journal of Surgery	Bi-monthly	8000	7500	625	586
Ophthalmology and Allied Sciences	Triannual	6000	5500	469	430
Otolaryngology International	Semiannual	5500	5000	430	391
Pediatric Education and Research	Triannual	7500	7000	586	547
Physiotherapy and Occupational Therapy Journal	Quarterly	9000	8500	703	664
RFP Indian Journal of Medical Psychiatry	Semiannual	8000	7500	625	586
Urology, Nephrology and Andrology International	Semiannual	7500	7000	586	547

Terms of Supply:

1. Agency discount 10%. Issues will be sent directly to the end user, otherwise foreign rates will be charged.
2. All back volumes of all journals are available at current rates.
3. All Journals are available free online with print order within the subscription period.
4. All legal disputes subject to Delhi jurisdiction.
5. Cancellations are not accepted orders once processed.
6. Demand draft / cheque should be issued in favour of "Red Flower Publication Pvt. Ltd." payable at Delhi
7. Full pre-payment is required. It can be done through online (http://rfppl.co.in/subscribe.php?mid=7).
8. No claims will be entertained if not reported within 6 months of the publishing date.
9. Orders and payments are to be sent to our office address as given above.
10. Postage & Handling is included in the subscription rates.
11. Subscription period is accepted on calendar year basis (i.e. Jan to Dec). However orders may be placed any time throughout the year.

Order from
Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091 (India), Tel: 91-11-22754205, 45796900, Fax: 91-11-22754205. E-mail: sales@rfppl.co.in, Website: www.rfppl.co.in