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CONTENTS

Websites of Selected Autonomous Colleges Affiliated to Bharathidasan University: A Webometric Study

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Abstract

One has to undergo many hurdles to gain knowledge in his life. Instead of that if he browses the web, he can easily avail the knowledge from others experience. Hence the researcher makes an attempt to analyse the websites of aided autonomous colleges affiliated to Bharathidasan University. This paper gives a fair idea about the information provided by the websites of 10 colleges. This study aimed at establishing a kind of academic ranking of these websites by measuring their Web Impact Factor. Most of the college websites are having (.ac.in.) domain, followed by (.edu.in.). Among the aided autonomous colleges, Holy Cross College, Trichy scores 1st Rank with total number of links of 253 in their websites. Poompuhar college stood 1st with overall impact factor of 4.3., whereas St. Joesph College occupy the 1 st position in rich text with 1430 (.pdf) files. This study will give an idea about the strength and weakness of their website which helps them to eradicate the weaknesses and to improve the quality of websites in future.

Keywords: *Web Impact Factor; Webometrics; Link Analysis; Web Resources; Web Page.*

1. INTRODUCTION

Quantitative study of the World Wide Web termed as webometric. It tries to measure the World Wide Web to get knowledge about the number and types of hyperlinks, structure of the www and usage patterns. Webometrics is a science based on Info metrics methods, which studies the nature and the characteristics of websites. In 1993, the CERN announced that the World Wide Web (WWW) would be free to anyone with no fees. Internet is a global data communications system which requires hardware and software infrastructure for interconnectivity between computers whereas WWW is one of the services communicated over the Internet by inter-connected hypertext documents and other resources. The Growth of the web is increasingly day by day in all dimensions. Tim Berners-Lee, in 1990, developed the "hypertext transfer protocol" (HTTP), the "hypertext markup language" (HTML), the first web browser, the first HTTP Server and the first webpage. Popular growing dimensions of the web, are the number of search engines, social networking, file sharing, online applications, search engine optimization (SEO), information retrieval techniques etc.,

2. THE ROLE OF WEBSITES

There are infinite fields in today's world and due to excessive competitors in every field of competition has become toughest. Considering this competition publicity is the one and only way to enhance your business and to compare with competitors. In early days, the publicity sources were brochures, banners, pamphlets, now advertising through web is fashionable. Websites were designed by professional web designing companies like Toronto web designing were succeeded.

2.1 Advantages of having a Website

- **Audience:** Information about your business is available to anyone in the world.
- **Access:** Access to your information is available on the web 24 hours a day.
- **Competition Edge:** Efficiency would be shown in a better way.
- **Cost Savings:** Cost savings are significant for both client and customer.
- **Maintenance:** Fast content updation.
- **Search:** Get noticed by the search engines.
- **Communication:** Platform for client and customer interaction.
- **Networking:** Use your website to network with other companies.
- **Publicity:** Publicize your web site by linking with other websites.
- **Awareness:** Enhance your image by placing your website on your business card.

3. WEBOMETRICS

The term webometrics is a coinage from two modern English words, 'Web' and 'metric'. The word web is a short form of WWW. The inclusion of Webometrics inevitably expands the field of Bibliometrics. As ideas rooted in Bibliometrics, Scientometrics and Informetrics have contributed to the emergence of Webometrics. The term 'Webometics' was first coined by Almind and Ingwersan (1997). According to Ingwersan (2004), the definition of webometrics is "the study of the quantitative aspects of the construction and use of information resources, structure and technologies on the web drawing on bibliometric and Informetric approaches.

3.1 Areas of Webometric Research

- Web Page Content Analysis
- Web Link Structure Analysis
- Web Usage Analysis
- Web Technology Analysis

3.2 Link Analysis

The web is consisted of inter-connected hypertext documents with hyperlinks. The hyperlinks are mostly made for navigational purpose of the web which direct to relatively similar content. The hyperlink is also called as out link of the hypertext. The total number of hypertext document in any website can be measured by using the command site in search engines.

3.2.1 Internal Link:

It is also called as Inbound link or Internal link is a type of hyperlink on a webpage to another page or resource such as an image or document, on the same website or domain.

3.2.2 External Link:

It is also called as outbound link or External link that links outside of your domain to websites on the internet. By linking to the websites with information is to increase the site credibility of our websites.

4. REVIEW OF LITERATURE

As far as the field of webo metric is concerned, the literature on the subject is constantly growing. The researcher made an attempt to review articles published in journals, survey reports and chapters taken from the book relevant to the study,.

R. Jeyshankar and B. Ramesh Babu (2009) Website of universities in tamilnadu: A webometric study examines that the study of websites of 45 universities in tamilnadu comprising of 27 states and 18 private universities, identifies the domain systems of the websites analyses the number of WebPages and link pages and calculates the Simple Web Impact Factor (WIF) Self-link Web Impact Factor (WIF) Self-link Web Impact Factor, External Link Web Impact Factor of the universities websites in Tamil nadu and ranks the website as per WIF.

Mike Thelwall (2002) ranked the top 100 linked to pages on UK university websites: high in-link counts are not usually associated with quality scholarly content. High citation counts are usually indicators, of high-quality research, but are the same true for counts of links to academic web pages? The 100 highest linked- to pages on university websites were obtained from link counts between institutions in the UK, excluding same university links.

Thomas, O. & Willett, P. (2000) Webometric analysis of Departments of Librarianship and Information Science described a webometric analysis of the linkages to websites associated with individual departments of LIS in UK universities. The findings of the study revealed that it was not possible to identify any significant correlation between the citation data and peer evaluations of research excellence embodied in the Research Assessment Exercise (RAE) ranking.

5. METHODOLOGY

This study used search engines and personal web crawlers to find out the number of web pages, external in-links, rich files and the total rank for 10 aided colleges affiliated to Bharathidasan University with active exclusive websites were calculated. The majority of webometric studies have used the advanced search options of search engines such as Google.

6. OBJECTIVES

- The primary objective of this study is to formulate a methodology for the calculation of Web Impact Factor (WIF)

- To identify the domain systems of aided autonomous colleges affiliated to Bharathidasan University websites in terms of web pages.
- To measure the quality of websites in terms of WebPages, Number of link pages, Number of Rich Text files of aided autonomous colleges affiliated to Bharathidasan University.

7. DATA COLLECTION TOOLS

This study used Google search engine for collecting the raw data. Google's advanced web queries were used to find the approximate number of pages in each website that link one another. The links search was conducted using personal web crawlers. The main search was conducted using the keyword like the entire college website. When undertaking WIF study, it is necessary to select a suitable search engine that will count the number of pages in the website and the number of pages linking to the website.

7.1 Search Engines

Search Engines are widely used as information retrieval tools. These are extensively used in the webometric research for retrieving data from the web. There are number of search engines are available with distinct features. The most widely used search engines are Alta Vista, Yahoo!., Google, All the web, Lycos, MSN, Excite and Metacrawlers, HotBot, Dogpile etc. Search engine Alta Vista has been mostly used by researcher in webometic studies.

7.2 Personal Web Crawlers

Another important data sources are personal Web Crawlers. The most popular personal web crawlers, which are used in link analysis research, are SocSciBot and LexiURL. These two web crawlers are developed by Prof. Mike Thelwal, University of Wolwehampton, UK, in order to find out alternative link analysis strategy. These web crawlers crawl webpages and download them in a local machine and then, tries to analyse them using integrated analytical software. i.e. Pajek, Cyclist, Ucinet, Net Draw, etc., to analyze the data and to build network graphs for representation of link data.

8. METHODS OF DATA COLLECTION

This study makes a webometric analysis of following 10 colleges of aided arts and sciences affiliated to Bharathidasan University. Advanced search option in a Google search engine is used to collect the data about rich files in the website, to find the number of pages in the website.

8.1 Size (S)

Number of pages calculated by Google, Yahoo and Bink search engines. For each search engine, results are presented separately and each colleges is given a score regarding the combined sum of the scores obtained from all the three search engines as advised by Aguillo et at. (2006). The size of each domain was calculated with the following strategy:

Site: example.com

8.2 Visibility (V)

Visibility is the total number of external in-links received by a site and this can be obtained by small SEO tool.

http://Smallseotools.com/website~links~count~checker.

8.3 Rich Files (R)

Rich files are complete and independent items in different formats (such as Adobe Acrobat (.pdf), Microsoft Excel (.xls), Microsoft Word (.doc), Microsoft PowerPoint (.ppt) and Extensible Markup Language (XML). Number of file formats for each university was obtained on Google with the following strategy:

Site: www.example.com
File type: example file format (.pdf)

9. IMPACT FACTOR

Simple Web Impact Factor is calculated by using the formula

SWIF = B/A

Where, B = Links of web page
A = Number of WebPages

10. ANALYSIS AND INTERPRETATIONS

The researcher analyzed and interpreted the data which would collect through Internet. After checking the website for completion and editing the entire, the researcher has been analyzed the data. The data are presented in the form of tables and figures, in subject-wise.

Table 1 shows that the frequency of domain by the websites form. Most (40%) of the websites are having (.ac.in) domain and more number (20%) of the websites are having (.edu) & (.edu.in) domain.

Table 1 Classification by Domain

Sl. No.	Domain	No. of Websites	Percentage (%)
1	.co.in	1	10
2	.edu.in	2	20
3	.edu	2	20
4	.ac.in	4	40
5	.com	1	10
Total		10	100

It is inferred from Table 2 that out of 10 colleges, Nehru Memorial College occupy more number of WebPages with 547 pages and Poompuhar college occupy less number of websites with 50 pages in their websites.

Table 3 shows that the total number of links which includes internal links and external links available in respective college websites. The total links of all college websites consist of 1234 numbers, among the selected colleges, Holy Cross College stood first as per as total links are concerned.

Table 2 WebPages

Sl. No.	Name of Website	No. of Web Pages	Percentage (%)
1	www.sripushpamcollege.co.in	278	9.52
2	www.bhc.edu.in	330	11.33
3	www.jmc.edu	518	17.75
4	www.net.ac.in	142	4.86
5	www.nmc.ac.in	547	18.7
6	www.poompuharcollege.com	50	1.73
7	www.sjctni.edu	278	9.54
8	www.adjadmc.ac.in	288	9.8
9	www.hectrichy.ac.in	286	9.79
10	www.srcollege.edu.in	203	6.98
Total		2920	100

Table 3 Web Links

Sl. No.	Name of Website	No. of Links	Percentage (%)
1	www.sripushpamcollege.co.in	43	3.48
2	www.bhc.edu.in	94	7.61
3	www.jmc.edu	109	8.83
4	www.net.ac.in	27	2.18
5	www.nmc.ac.in	167	13.53
6	www.poompuharcollege.com	215	17.42
7	www.sjctni.edu	165	13.37
8	www.adjadmc.ac.in	97	7.86
9	www.hectrichy.ac.in	253	20.50
10	www.srcollege.edu.in	64	5.18
Total		1234	100

It is revealed from Table 4 study that out of 10 colleges, Poompuhar College occupies 1 st Rank with overall Web Impact Factor of 4.3 which is followed by Holy Cross College with WIF of 0.885.

It is revealed from Table 5 that out of 10 colleges St. Joseph‘s College stood fist place in keeping Rich Text Files (PDF) with 44% , whereas SRC has the least number of Rich Text Files in its website.

Table 4 Simple Web Impact Factor

Name of the College	Total Web Pages	Total Links	SWIF	Rank
Poompuhar College (Autonomous), Poompuhar	50	215	4.3	1
Holy Cross College (Autonomous), Tiruchirappalli	286	253	0.885	2
St. Joseph`s College (Autonomous), Tiruchirappalli	278	165	0.593	3
A.D.M. College for Women (Autonomous), Nagapattinam	288	97	0.337	4
Seethalakshmi Ramaswami College (Autonomous), Tiruchirappalli	203	64	0.315	5
Nehru Memorial College (Autonomous), Puthanampatti	547	167	0.305	6
Bishop Heber College (Autonomous), Tiruchirapalli	330	94	0.285	7
Jamal Mohamed College (Autonomous), Tiruchirappalli	518	109	0.210	8
National College (Autonomous), Tiruchirappalli	142	27	0.190	9
A.V.V.M. Sri Pushpam College (Autonomous), Poondi	278	43	0.155	10

Table 5 Rich Files

Sl. No.	College	No. of PDF Files	Percentage (%)
1	St. Joseph`s College, Trichy	1430	43.03
2	Jamal Mohamed College, Trichy	996	29.97
3	Nehru Memorial College, Puthanampatti	266	8.00
4	Holy Cross College, Trichy	146	4.39
5	A.V.V.M. Sri Pushpam College, Poondi	141	4.24
6	Poompuhar College, Melaiyur	120	3.61
7	National College, Trichy	92	2.76
8	A.D.M. College for Women, Nagapattinam	81	2.43
9	Bishop Heber College, Trichy.	26	0.78
10	SRC, Trichy	25	0.75

11. FINDINGS

- Holy Cross College occupy the 1 st position with total number of links of 253 in its websites
- St. Joseph's College occupies 1 st Rank in Rich Text Files with 1430 pdf files.
- Nehru Memorial College occupies more number of WebPages with 547 counts.
- Poompuhar College occupies 1 st Rank with overall Web Impact Factor of 4.3
- Most (40%) of the websites are having (.ac.in) domain followed by (.edu.in)

12. CONCLUSION

Webometrics is a new research field for researchers to analyze and synthesize the findings and to further develop theories and methodologies in order to provide a better understanding of the complex topology, functionalities and potentials of the web. Link analysis of the websites of aided autonomous colleges are affiliated to Bharathidasan University is an unexplored are of webometric research. This study reflects that some colleges have higher number of web pages but correspondingly their link pages are very small in number. This study will give an idea about the strength and weakness of their website which helps them to eradicate the weaknesses and to improve the quality of websites.

REFERENCES

[1] O. Thomas and P. Willett, "Webmetric Analysis of Departments of Librarianship and Information Science", Journal of Information Science, Vol.26, No.6, 2000, pp.421-428.

[2] M. Thelwall, "The top 100 Linked-to-pages on UK University Websites:high Inlink Counts are not Usually Associated with Quality Scholarly Count", Journal of Information Science, Vol.28, No.6, 2002, pp.483-491.

[3] R. Jeyshankar and B. Ramesh Babu, "Websites of Universities in Tamilnadu: A webometic Study", Annals of Library and Information Studies, Vol.56, No.2, 2009, pp.69.

[4] P. Mukopadhyay, "Measuring Web Impact Factors: A Webometric Study Based on the Analysis of Hyperlinks", Proceedings of National Seminar on Information Support for Rural Development, IASLIC, December 2004.

[5] R. Prabakaran and L. Shalini, "Astronomy and Astrophysics Libraries Websites in India: A Webometric Analysis, Dynamics of Librarianship in the Knowledge Society", Vol.4, B.R. Publishing Corporation: Delhi, 2012.

[6] N. O. Natarajan, "Importance of Web Technology in LIS field, Information Mgnt. in Digital Era", IRC-VIETW: Tiruchengode, 2013.

[7] S. Thanuskodi, "Webometic Analysis of Private Engineering College Websites in Tamilnadu", Journal of Communication, Vol.2, No.2, 2011, pp. 73-81.

[8] www.Smallseotools.com, website~links~count~ checker.

A Study on Open E-Books in DOAB for Library and Information Science

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Abstract

This paper discusses the open e-books in library and information science subject which are available in the Directory of Open Access Books (DOAB). It provides access to e-books published under open access mode with links to the full text of the publications at the publisher's website or repositories. The relevant data has been collected from the open access directory from http://www.openbooks.org/ on 15th June 2017. The available books in the directory is 3379 books, the results revealed that language wise analysis, it is found that among the 35 books, 19(54.28) books are published by English out of which is 2(5.71)books has CC-BY-NC and 17 books (48.57%) has CC-BY-NC-ND licenses. It is further revealed from the table that only one book each has been published in the languages like Deutsch and English/French are available in DOAB. Totally 35 books are available as on 15.6.2017. Among them, 13 books (0.38%) do not have the author information in the respective sources.

Keywords: *DOAB, Licenses, Open Access*

1. INTRODUCTION

Information stored in different forms from clay tablet to bits of electronic. These are all preserved from temple, king's palace, archives, libraries and recently in internet. The paper form of information stored has very strong validity among all the forms of publications. After invention of paper, the concept of libraries evolved and many big libraries have been built across the World. Initially access to libraries was limited only to important peoples in the society and now everybody can access the required information in these libraries. The current scenario, internet made access to information free of cost and can be used for any purposes known as open access resources.

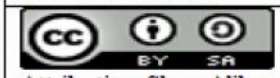
Due to the development of Information and Communication Technologies, the scenario has been changed and the printed documents are converted to electronic form and they are made available to everybody with the help of Internet. Internet helps to access to any information at anywhere without any boundaries. So, Internet brought the concept of accessing information stored in the network around the World. Further, it is made available for public access, private access with the help of technology. After the successful launch of open access system for journals (Directory of Open Access Journal), now the directory for open access to books has been emerged in this direction as Directory of Open Access Books (DOAB). This paper has been made an attempt to study and analysis on the DOAB.

2. DIRECTORY OF OPEN ACCESS BOOKS (DOAB)

The Directory of Open Access Books (DOAB) is one of the good initiatives to provide Open Access on monographs. It provides a searchable index with links to the full texts of the publications at the publisher's website or repository for peer-reviewed monographs through Open Access business model. In order to increase dissemination, impact and visibility, the content format should be in interoperable metadata format in which the libraries can integrate the directory into their online catalogues, thereby helping scholars, students and the general public to discover the books. The Aggregators may integrate the records in their commercial services. The DOAB is opened to all academic publishers to provide their data in specified metadata. The main aims of DOAB are to cover all the subjects as well as all the languages to include as many as books as possible1 for access to general public, free of cost. The Directory of Open Access Books (DOAB) officially launched on July 1, 2013 at the Open Access Monographs in the Humanities and Social Sciences Conference at the British Library in London2. However, unofficially it was operating since 2011 and its beta version was launched in 2012. The DOAB is a service of the Open Access Publishing in European Networks (OAPEN) Foundation. The

OAPEN Foundation is an international initiative dedicated to open access monograph publishing, based at the National Library, The Hague3.

3. TYPE OF LICENCES

 Attribution CC BY	This license lets readers to distribute, remix, tweak, and build upon the existing work, even commercially, as long as they credit the author for the original creation. Recommended for maximum dissemination and use of licensed materials.
 Attribution-ShareAlike CC BY-SA	This license lets readers remix, tweak, and build upon the existing work even for commercial purposes, as long as they credit the author and license their new creations under the identical terms. All new works based on the existing work will carry the same license, so any derivatives will also allow commercial use.
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If the author allowed additional derivative works, then the newly created work will be followed the same license terms. This idea is called as "ShareAlike" and it is inspired by the General Public License (GNU) which is used by many free and open source software projects. The main intention of the authors is to maximize the research results impact. Copyright should not be hindrance against this intension. There exists websites and tools to find out the journals and rights they are granting for distribution, reuse, etc. So the authors have to rethink about how their work will be carried out further and they should choose right journals to publish.

Proper licensing improves and enhances the scientific progress and also honors the authors by retaining the copyright of the authors of their own intellectual work. Open Access are author-friendly, reader-friendly, research-friendly.

4. REVIEW OF LITERATURE

Brody (2004)[4] studied the research access/impact problem that arises with the journal articles which were not accessible to all of the users. Hence, they are losing potential research activities and its impact. The solution is to make all articles available in Open Access. The Open Access articles have significantly higher citation impact than non-open access articles. There are two roads which is "golden" and "green" road. Only 5% of journals are in gold, but more than 90% are already green

yet only about 20% of articles have been self-archived. The e-books with CC license listed in DOAB are downloaded almost twice (181 %) as compared to e-books with a more restrictive license available in the OAPEN Library in a period of one year from June 2013-May 2014[5]. This is the reason that DOAB includes e-books available through the CC or comparable licenses. Even the e-books available in the OAPEN Library with a more restrictive license aren't included in DOAB. DOAB is being developed in close cooperation with Lars Bjørnshauge and Salam Baker Shanawa (Director of SemperTool), who were also responsible for the development of the Directory of Open Access Journals (DOAJ)[6] Fayaz Ahmad Loan (2015)[7] found that 307 e-books under three categories–monographs 68.08 %), book series 30.29 % and conference proceedings 1.63 % are available for science and technology through DOAB. These e-books deal with eight major subject areas of Science and Technology having 36 sub-fields. The maximum number of e-books is available for the subjects like General Science, Technology & Engineering, Earth & Environmental Sciences and Health & Medical Sciences. Dhanavandan and Tamizhchelvan (2016)[8] found that the 1584 (46.88%) books are published in English under various categories of licenses as follows: 83 books with CC BY, 153 with CC-BY-NC, 814 with CC-BY-NC-ND, 36 books with CC-BY-NC-SA, 24 books with CC-BY-ND and 29 with CC-BY-SA licenses and 445 books without any of the licenses.

5. OBJECTIVES

The framed objectives are:

- To know the author wise library science open access book in DOAB
- To identify the publishers wise books available in DOAB
- To find out the year of publication versus licensed books in DOAB
- To analysis the language wise availability of licensed books
- To identify the number of pages in the licensed books in DOAB

6. METHODOLOGY

This study discusses the availability of library and information science books in the Directory of Open Access Books (DOAB). The required data has been collected from the open access directory from http://www.openbooks.org/ on 15th June 2017. It has been analysed by using simple percentage and Chi-square test.

7. DATA ANALYSIS AND INTERPRETATION

7.1 Author Wise Distribution of Books Available in DOAB

Table 1 shows the author-wise distribution of books available in the Directory of Open Access Books has been analysed and the author Vs creative Common license-wise distribution of books available in the Directory of Open Access Books for the Library and information Science Subject. Totally 35 books are available as on 15.6.2017. Among them, 13 books (0.38%) do not have the author information in the respective sources.

7.2. Publisher-wise Distribution of Books

table 2 shows the publisher-wise distribution of books available in the Directory of Open Access Books has been analysed and the publishers author Vs creative Common license wise distribution of open access books to the library and information science subject which is available in the Directory of Open Access Books. There are 19 books (54.28%) by De Gruyter which consist of 18(51.42) books has CC-BY-NC-ND and only one book has CC-BY-NC-SA license and ranked top in publication sector. It is pointed out that from the 4(11.43) books are comes undert the OpenEdition category which are authored by Presses de l'Universitı de Montrıal and OpenEdition Press.

Chi-square test is applied for further discussion about the licenses of open access books with respect to publishers. The computed Chi-square value is 14708.302 which is higher than its tabulated value of 5 percent level of significance. Hence the difference among licenses wise publication is statistically identified as highly significant with respect to publisher wise open access books in DOAB.

Chi-Square Tests

	Value	DF	Asymp. Sig. (2-sided)
Pearson Chi-Square	85.423	24	.000
Likelihood Ratio	51.882	24	.001
N of Valid Cases	35		

Table 1 Author-wise Distribution of Books Available in DOAB

Sl.No.	Author	Licenses				Total
		CC-BY-NC	CC-BY-NC-ND	CC-BY-NC-SA	OpenEdition	
1	Weingart, Peter --- Taubert, Niels	0	0	1(2.86)	0	1(2.86)
2	Varlejs, Jana --- Walton, Graham	0	1(2.86)	0	0	1(2.86)
3	Simone Aliprandi	0	0	1(2.86)	0	1(2.86)
4	Rudasill, Lynne M. --- Witt, Steve W.	0	1(2.86)	0	0	1(2.86)
5	Pierre Mounier (dir.)	0	0	0	1(2.86)	1(2.86)
6	Maurizio Vivarelli	0	0	1(2.86)	0	1(2.86)
7	Martinez Tamayo, Ana Maria --- Mendes, Paola Verónica	0	0	1(2.86)	0	1(2.86)
8	Margarita Pérez Pulido --- Maurizio Vivarelli	0	1(2.86)	0	0	1(2.86)
9	Koops, Willem Roelf Henderikus --- Wieder, Joachim	0	1(2.86)	0	0	1(2.86)
10	Kominko, Maja (Editor)	0	1(2.86)	0	0	1(2.86)
11	Kolderup Flaten, Trine	0	1(2.86)	0	0	1(2.86)
12	Heaney, Michael	0	1(2.86)	0	0	1(2.86)
13	Guylaine Beaudry	0	0	0	1(2.86)	1(2.86)
14	Guijarro González, Susana	0	1(2.86)	0	0	1(2.86)
15	Gubbin, Barbara --- Koontz, Christie	0	1(2.86)	0	0	1(2.86)
16	Genoni, Paul --- Walton, Graham	0	1(2.86)	0	0	1(2.86)
17	Friedrich, Michael --- Schwarke, Cosima	0	1(2.86)	0	0	1(2.86)
18	Ernest Abadal	0	1(2.86)	0	0	1(2.86)
19	E.H. Fredriksson (ed.)	1(2.86)	0	0	0	1(2.86)
20	Dione, Bernard --- Savard, Réjean	0	1(2.86)	0	0	1(2.86)
21	Deeg, Christoph	0	1(2.86)	0	0	1(2.86)
22	De Simini, Florinda	0	1(2.86)	0	0	1(2.86)
23	Danowski, Patrick --- Pohl, Adrian	0	1(2.86)	0	0	1(2.86)
24	Cuninghame, Keith	0	1(2.86)	0	0	1(2.86)
25	Carlo Bianchini --- Mauro Guerrini	0	1(2.86)	0	0	1(2.86)
26	Bothma, Theo J. D. --- Lau, Jesús --- Tammaro, Anna Maria	0	1(2.86)	0	0	1(2.86)
27	Alain Grandbois	0	0	0	1(2.86)	1(2.86)
28	Abdullahi, Ismail	0	1(2.86)	0	0	1(2.86)
29	Koopman, Sjoerd --- Njobvu, Benson	0	1(2.86)	0	0	1(2.86)
30	Dominique Boullier, Audrey Lohard	0	0	0	1(2.86)	1(2.86)
31	Boekhorst, Peter te --- Poll, Roswitha	0	1(2.86)	0	0	1(2.86)
32	Bergmann, Julia --- Danowski, Patrick	0	1(2.86)	0	0	1(2.86)
33	No Information	1(2.86)	0	2	0	3(8.57)
	Total	2(5.71)	23(65.71)	6(17.14)	4(11.43)	35(100)

7.3 Language-wise Distribution of Books

Table 3 shows the languages-wise distribution of books available in the Directory of Open Access Books has been analysed and indicates the language Vs creative Common license wise distribution of open access books available in Directory of Open Access Books for library and information science subject. Among the 35 books, 19(54.28) books are published by English out of which is 2(5.71)books has CC- BY-NC and 17 books (48.57%) has CC-BY-NC-ND licenses. It is further revealed from the table that only one book each has been published in the languages like Deutsch and English/French are available in DOAB. And also 4(11.43) books published in French language which is comes Open Edition category.

The Chi-square test is for the licenses with respect to language-wise distribution of open access books on DOAB. The computed Chi-square value is 57.477 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among licenses wise publication is statistically identified as highly significant with respect to language wise open access books in DOAB.

Table 2 Publisher-wise Distribution of Books

Sl. No.	Publishers	Licenses				Total
		CC-BY-NC	CC-BY-NC-ND	CC-BY-NC-SA	OpenEdition	
1	Universidad Nacional de La Plata. Facultad de Humanidades y Ciencias de la Educa	0	0	1(2.86)	0	1(2.86)
2	Universidad Carlos III de Madrid. Figuerola Institute of Social Science History	0	1(2.86)	0	0	1(2.86)
3	Presses de l'Université de Montréal	0	0	0	2(5.71)	2(5.71)
4	OpenEdition Press	0	0	0	2(5.71)	2(5.71)
5	Open Book Publishers	0	1(2.86)	0	0	1(2.86)
6	Ledizioni - LediPublishing	0	3(58.57)	4(11.43)	0	7(20.00)
7	IOS Press	1(2.86)	0	0	0	1(2.86)
8	EDP SCIENCES	1(2.86)	0	0	0	1(2.86)
9	De Gruyter	0	18(51.42)	1(2.86)	0	19(54.28)
	Total	2(5.71)	23(65.71)	6(17.14)	4(11.43)	35(100)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	57.477[a]	21	.000
Likelihood Ratio	46.080	21	.001
N of Valid Cases	35		

7.4 Year-wise Distribution of Books

The Table 4 shows that publication year-wise distribution of books available in the Directory of Open Access Books has been analysed and indicates the block year wise distribution of books publications available in the Directory of Open Access Books against types of licenses. The publication year were categorized as up to 2005, 2006 to 2010, 2011 to 2015 and 2015. Among the 35 books, 11 books (31.42 are equally published 2006to 2010 and 2011 to 2015. All the 11 books published in 2005 to 2010 are having CC-BY-NC-ND licenses only. But in the 2011 to 2015 which includes 5(14.29) book has CC-BY-NC-ND and 3(8.57) are equally has CC-BY-NC-SA and OpenEdition. It is revealed from the table, only one book has no year of publication information in the sources.

Table 3 Language-wise Distribution of Books

Sl.No.	Languages	Licenses				Total
		CC-BY-NC	CC-BY-NC-ND	CC-BY-NC-SA	OpenEdition	
1	Spanish	0	1(2.86)	1(2.86)	0	2(5.71)
2	Italian/Englsih	0	0	2(5.71)	0	2(5.71)
3	Italian	0	1(2.86)	2(5.71)	0	3(58.57)
4	German	0	2(5.71)	1(2.86)	0	3(58.57)
5	French	0	0	0	4(11.43)	4(11.43)
6	English/French	0	1(2.86)	0	0	1(2.86)
7	English	2(5.71)	17(48.57%)	0	0	19(54.28)
8	Deutsch	0	1(2.86)	0	0	1(2.86)
	Total	2(5.71)	23(65.71)	6(17.14)	4(11.43)	35(100)

Chi-square test has been applied on the data for further discussion on the year wise publication of open access books with respect to type of licenses. The computed Chi-square value is 33.597 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among licenses wise publication is statistically identified as highly significant with respect to year wise publication of open access books in DOAB.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.597	12	.001
Likelihood Ratio	26.738	12	.008
N of Valid Cases	35		

Table 4 Year-wise Distribution of Books

Sl.No.	Year	Licenses				Total
		CC-BY-NC	CC-BY-NC-ND	CC-BY-NC-SA	OpenEdition	
1	No Information	1(2.86)	0	0	0	1(2.86)
2	Upto 2005	1(2.86)	3(8.57)	0	1(2.86)	5(14.29)
3	2006-2010	0	11(31.42)	0	0	11(31.42)
4	2011-2015	0	5(14.29)	3(8.57)	3(8.57)	11(31.42)
5	After 2015	0	4(11.43)	3(8.57)	0	7(20.00)
	Total	2(5.71)	23(65.71)	6(17.14)	4(11.43)	35(100)

7.5 Book Series-wise Open Access in DOAB by Type of Licenses

Table 5 Shows the distribution book series-wise open access books in the Directory of Open Access Books has been analysed and book series-wise distribution of open access books available in Directory. Out of 35, 13 books (37.14%) published by IFLA Publications and 2 books(5.71%) are equally published by Studies in Manuscript Cultures and Bibliotheks- und Informationspraxis. It is further revealed from the table 13 books(37.14%) has no information about the book series.

Chi-square test is applied for the licenses of open access books with respect to year of addition on DOAB versus licenses. The computed Chi-square value is 31.488 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among licenses wise publication is statistically identified as highly significant with respect to added year of open access books in DOAB.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.488	24	.140
Likelihood Ratio	34.134	24	.082
N of Valid Cases	35		

Table 5 Book Series-wise Open Access in DOAB by Type of Licenses

Sl. No.	Book Series	Licenses				Total
		CC-BY-NC	CC-BY-NC-ND	CC-BY-NC-SA	OpenEdition	
1	Studies in Manuscript Cultures	0	2(5.71)	0	0	2(5.71)
2	Praxiswissen	0	1(2.86)	0	0	1(2.86)
3	IFLA Publications	0	13(37.14)	0	0	13(37.14)
4	Historia de las Universidades	0	1(2.86)	0	0	1(2.86)
5	Editoria – Presente e Futuro	0	1(2.86)	0	0	1(2.86)
6	Copyleft Italia	0	0	1(2.86)	0	1(2.86)
7	Bibliotheks- und Informationspraxis	0	2(5.71)	0	0	2(5.71)
8	Biblioteca Humanidades	0	0	1(2.86)	0	1(2.86)
9	No Information	2(5.71)	3(58.57)	4(11.43)	4(11.43)	13(37.14)
	Total	2(5.71)	23(65.71)	6(17.14)	4(11.43)	35(100)

7.6 Open Access on DOAB by Number of Pages

Table 6 shows that distribution number of pages wise open access books in the Directory of Open Access Books has been analysed and the distribution of open access books available in Directory of Open Access Books which are categorized with its length of content. The categories consist of pages 1-250, 251-500, 501-750 and above 751. Among the 35, 13 books (37.14%) has been published with less than 250 pages, 15 books (42.86%) between 251 to 500 pages, 2 books (5.71%) between 501 to 750 pages, 1 book (2.86%) has been published with more than 751 pages and 4 books (11.43%) has no mention on its length of content in the directory.

Chi-square test is applied for further discussion about the licenses of open access books with respect to number of pages. The computed Chi-square value is 14.763 which is less than its tabulated value at 5 percent level of significance. Hence the difference among licenses versus number of pages is statistically identified as insignificant.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.763[a]	12	.255
Likelihood Ratio	11.725	12	.468
N of Valid Cases	35		

Table 6 Open Access on DOAB by Pages

Sl.No.	Pages	Licenses				Total
		CC-BY-NC	CC-BY-NC-ND	CC-BY-NC-SA	OpenEdition	
1	No Information	1(2.86)	1(2.86)	1(2.86)	1(2.86)	4(11.43)
2	Upto 250	0	10(28.57)	2(5.71)	1(2.86)	13(37.14)
3	251-500	1(2.86)	10(28.57)	3(8.57)	1(2.86)	15(42.86)
4	501-750	0	2(5.71)	0	0	2(5.71)
5	Above 751	0	0	0)	1(2.86)	1(2.86)
	Total	2(5.71)	23(65.71)	6(17.14)	4(11.43)	35(100)

8. FINDINGS

- Totally 35 books are available as on 15.6.2017. Among them, 13 books (0.38%) do not have the author information in the respective sources.
- Books. There are 19 books (54.28%) by De Gruyter which consist of 18(51.42) books has CC-BY-NC-ND and only one book has CC-BY-NC-SA license and ranked top in publication sector. It is pointed out that from the 4(11.43) books are comes undert the OpenEdition
- Among the 35 books, 19(54.28) books are published by English out of which is 2(5.71)books has CC-BY-NC and 17 books (48.57%) has CC-BY-NC-ND licenses. It is further revealed from the table that only one book each has been published in the languages like Deutsch and English/French are available in DOAB.
- Out of 35, 13 books (37.14%) published by IFLA Publications and 2 books(5.71%) are equally published by Studies in Manuscript Cultures and Bibliotheks- und Informationspraxis.
- 13 books (37.14%) has been published with less than 250 pages, 15 books (42.86%) between 251 to 500 pages, 2 books (5.71%) between 501 to 750 pages

9. CONCLUSION

There are directories coming out with sole publications as journals, books, repositories and so on. The primary purpose of all directories definitely satisfy the end users for getting more documents through open access mode without spending more money for required information. The DOAB is a platform to have more visibility for open access books to the user communities. The practicing library professionals and teaching fraternity of library and information science are procuded the more number of books, manuscripts and research outputs. It is also helping scholars and students to discover and utilize the open access books.

REFERENCES

[1] DOAB-Directory of Open Access Books http://www.doabooks.org/

[2] J. Adema, "A Project Exploring Open Access Monograph Publishing in the Netherlands", 2013. https://www.surf.nl/binaries/content/assets/surf/en/knowledgebase/2013/OAPEN+Rapport_+A+project +exploring+ Open+ Access+ monograph+publishing+in + the + Netherlands_2210 2015.

[3] R.Snijder, "A New Service For Open Access Monographs: The Directory Of Open Access Books",2012.http : // www. newworldencyclopedia. org/entry/E-book.

[4] J. Littman and L. S. Connaway, "A Circulation Analysis of Print Books and E-Books in an Academic Research Library", Lib. Res. & Techn. Serv., Vol.48, No.4, 2004, pp.256-62.

[5] T. Brody, F.O. ValliA res, L. Carr, S. Hitchcock, Y. Gingras and E.R. Hilf, "The Access/Impact Problem and The Green and Gold Roads to Open Access", Serials Review, Vol.30, No.4, 2004, pp.310-314.

[6] "DOAB Listing Books in DOAB Increases Usage", DOAB Newsletter, 2014. http://us4.campaign-archive1.com/home/?u=314fa411ba5eaaee7244c95e1&id=a362459f54

[7] J. Adema, "DOAB User Needs Analysis", 2012. https://doabooks.files.wordpress.com/2012/11/doab-user-needs.pd

[8] "SemperTool: All about the Digital Library", http://www.sempertool.dk/about, 2014.

[9] Fayaz Ahmad Loan and Refhat-un-nisa, "Open Access E-books in Science and Technology: A Case Study of Directory of Open Access Books", DESIDOC Journal of Library & Information Technology, Vol.35, No.4, 2015, pp.304-309.

[10] S. Dhanavandan and M. Tamizhchelvan, "Availability of Open Access Books in DOAB: An Analytical Study", DESIDOC Journal of Library & Information Technology, Vol.36, No.2, 2016, pp.79-87.

Mapping the Research Productivity of Indian National Science Academy (Insa): A Scientometric Study

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Abstract

The Scientometric study is a branch of all subjects including institutions. The Indian National Science Academy (INSA) in New Delhi is the apex body of Indian scientists representing all branches of science & technology to assess the performance during 1951 – 2015 (up to 1/9/2015) about 37 years, a total of 214 publications were downloaded by Scopus database for data. The study has applied and analyzed by the bibliometrics output parameters of each category like the year 2014 found as highly productivity output of20(9.35%); the most productivity author as found as "Gupta, B.M." with 19(8.88%); the "Scientometrics" as identify top rank of journals with 41(19.16%); the collaboration of affiliations of "National physical laboratory of India" and "Indian Institute of Science" with 10(4.67%) each and shared the top rank; the subject area wise ranked "Computer Science" with 64 documents; "Article" with 162 publications ranked at top by various types of documents and the collaborations of countries found as 13 which "India" has identified as top rank with 202(94.39%) of documents. The results of this study show that Bibliometrics /scientometrics have a great potential to gain valuable insights into the evolution of the research publications of an institution.

Keywords: *Bibliographic Output; Bibliometrics, Indian National Science Academy (INSA); Scientometrics; Scopus*

1. INTRODUCTION

The Indian National Science Academy promotes science and its use in India. It was established in 1935 and was known as the 'National Institute of Sciences of India' until the present name was adopted in 1970. The Government of India recognized it in 1945 as the premier scientific society representing all branches of science in India. In 1968, it was designated as the adhering organisation in India to the International Council for Science (ICSU) on behalf of the Government of India,New Delhi.

Now, INSA is a premier science academy in the country, plays crucial role in promoting, recognizing and rewarding excellence. An added important task is to publish journals, organize scientific discussions and bring out proceedings and monographs. It also promotes public awareness and understanding of science. Acting as links between the scientific community and the planners, they advise the governments on critical issues. Prominently they serve as forums for interaction among scientists within and outside the country. It recognizes many top young scientists, engineers and technologists by awarding them medals, providing modest support for pursuing research activities to needy young researchers. Senior scientists are honored with different awards/medals and the prestigious Research Professorship.

1.1 What is INSA?

Indian National Science Academy, (INSA) provides a national forum for the publication of research work carried out by Indian scientists and to provide opportunities for exchange of views among them.

2. OBJECTIVES

The following main objectives were framed for the present study is:

- Ranking the Year wise distribution of Indian National Science Academy (INSA) Publications;
- Identify the Author wise distribution of INSA Publications;
- Ranking the Source wise Distributions of Publications of INSA;
- To find out the various Document Types of INSA Publications;
- Ranking of Institutions wise Collaboration with INSA Publications
- Ranking the Countries/Territories wise collaboration with the INSA Scientists;
- Ranking the major Subject Areas of INSA Research Output;

3. METHODOLOGY

The methodology applicable and adopted in this study is Scientometric study, which used to analyzed in details the bibliographic attributes of the research productivity of Indian National Science Academy (INSA) in which indexed in Scopus database for the study period of 1951-2015 (1/9/2015) and found the records a total of 214 using for tabulation and analysesthis study to ranking the each parameters of research output of INSA.

4. DATA ANALYSIS AND INTERPRETATION

4.1 Ranking the Year-wise Research Productivity of INSA

The Table 1 shows the year-wise distributions of publication of INSA from 1951 - 2015. The study based on total 37 years the total output of 214 publications which indexed have analyses and resulted, the year 2014 ranked at top with 20 (9.35%) of records; followed the year 1997 and 1998 has shared the second rank with 18(8.41%) of records each; the years 1999, 2001, 2002 and 2003 has shared the third rank with 12 (5.61%) of records each and followed by the years and ranked their respective place of research output of INSA with records and percentage. Hence, it also shows that clearly there is a fluctuation trend of publications.

Table 1 Yearly Output of INSA Research

Year	Docs	%	Year	Docs	%
2015	5	2.34	1996	8	3.74
2014	20	9.35	1995	4	1.87
2013	10	4.67	1994	2	0.93
2012	6	2.80	1993	1	0.47
2011	3	1.40	1992	2	0.93
2010	5	2.34	1991	2	0.93
2009	5	2.34	1990	1	0.47
2008	3	1.40	1989	3	1.40
2007	3	1.40	1988	3	1.40
2006	1	0.47	1985	3	1.40
2005	9	4.21	1984	4	1.87
2004	8	3.74	1983	1	0.47
2003	12	5.61	1982	1	0.47
2002	12	5.61	1981	2	0.93
2001	12	5.61	1980	1	0.47
2000	9	4.21	1971	1	0.47
1999	12	5.61	1970	2	0.93
1998	18	8.41	1951	2	0.93
1997	18	8.41			

4.2 Source-wise Distribution of INSA Research Output

Table 2 presents the top 10 source wise output of 214 for the study period of 1951 to 2015 and found a total of 94 journals. Among them the "Scientometrics" has scored 41(19.16%) of documents and ranked at top; the "Current Science" has occupied the second rank with 21(9.81%) of documents; the "Journal of Scientific and Industrial Research" has occupied the third rank with 13(6.07%) of documents and followed by others in their respective places.

Table 2 Top 10 Source Output of INSA Research

Source	Documents	%
Scientometrics	41	19.16
Current Science	21	9.81
Journal of Scientific and Industrial Research	13	6.07
Proceedings of the Indian National Science Academy	6	2.80
Geotechnical and Geological Engineering	4	1.87
Annals of Library and Information Studies	4	1.87
World Patent Information	4	1.87
Indian Drugs	3	1.40
Journal of Chemical Physics	3	1.40
Technovation	3	1.40

4.3 Author-wise Distribution of INSA Research Output

Table 3 presents the top 10 most productive authors output of the total documents 214 during 1951 to 2015 and found as a total of 160 authors. Among them "Gupta, B.M." found as the top rank with 19(8.88%) of documents and followed by the author "Garg, K.C." with 15(7.01%) of publications and ranked second and the third rank got by "Sridharan, A." with 8(3.74%) of documents and the rest of authors were showing in the below table and figure with their publications and percentage by charts.

4.4 Affiliation-wise Collaboration Research Output of INSA

The table – 4 presents the top 10 affiliations wise collaboration output of INSA and found a total of 130 institutions out of the total 214 documents during 1951 to 2015. Among them the "National physical laboratory of

India" and "Indian Institute of Science" has scored 10(4.67%) of documents and occupied the first position and followed by the "Karnatak University India" as found as second rank with 8(3.74%) of publications; the third rank has shared by three institutions "IEEE", "Indian National Academy of Engineering" and "National Institute of Science Technology and Development Studies India" and scored with 6(2.80%) of documents and followed by other institutions in their respective places and its ranks shows in the below table 4.

Table 3 Top 10 Authors ofINSA Research

Author	Recs	%
Gupta, B.M.	19	8.88
Garg, K.C.	15	7.01
Sridharan, A.	8	3.74
Nagpaul, P.S.	7	3.27
Mondal, N.C.	7	3.27
Kumar, S.	7	3.27
Sarkar, S.K.	6	2.80
Gupta, B.M.	6	2.80
Karisiddappa, C.R.	5	2.34
Rai, L.P.	5	2.34

Table 4 Top 10 Institutions-wise Research Output of INSA

Affiliation	Docs	%
National physical laboratory of India	10	4.67
Indian Institute of Science	10	4.67
Kamatak University India	8	3.74
IEEE	6	2.80
Indian National Academy of Engineering	6	2.80
National Institute of Science Technology and Development Studies India	6	2.80
Indian Academy of Sciences	5	2.34
University of Kalyani	5	2.34
Council of Scientific and Industrial Research India	5	2.34
Sri Jayachamarajendra College of Engineering	5	2.34

4.5 Country-wise Distribution of Research Output of INSA

Table 5 presents thecountry wise output of INSA of 214 during 1951to 2015and found that the country wise collaborations were resulted a total of 13 countries, among them the "India" has identified as top rank with 202(94.39%) of documents and followed by "United States" has reported with 20(9.35%) of records which ranked at second; the third rank has shared by "Germany" and "United Kingdom" with 7(3.27%) of publications each and followed by others countries in their respective places.

Table 5 Top 10 Country-wise Output of INSA

Country	Recs	%
India	202	94.39
United States	20	9.35
Germany	7	3.27
United Kingdom	7	3.27
Belgium	3	1.40
Bangladesh	2	0.93
China	2	0.93
France	2	0.93
Italy	2	0.93
Switzerland	2	0.93
Blgaria	1	0.47
Canada	1	0.47
Malaisa	1	0.47

4.6 Document Types of Research Output of INSA

Table 6 presents the document types-wise output of 214 during the study period of 1951- 2015. Among the various types of documentswere analyses and resulted 8 items, in which "Article" has scored with 162publications and ranked at top; followed by the item "Review" has produced 17 records and got the second position; the third rank have occupied the item "Letter" with 9 documents and the rests are followed by others. The below figure also illustrate by graphically the same with percentage.

4.7 Subject Area Wise Distribution of INSA Re search Output

Table 7 presents thesubject area-wise output of INSA a total of214 for the study period of 1951 to 2015 found a total of 22 areas.

Among them"ComputerScience" with 64 documents were found and ranked at top among the other subject areas. Followed by "Social Sciences" has scored the 61 publications and stood at second rank; "Engineering" has

scored with 39 records and occupied the third rank; "Multidisciplinary" has ranked at fourth with 37 records and followed by other areas of publications. The below figure also show the diagrammatic explanation of INSA output.

Table 6 Types of Documents of INSA Output

Document Type	Docs
Article	162
Book	2
Conference Paper	8
Editorial	5
Letter	9
Note	5
Review	17
Undefined	6
Total	**214**

Table 7 Subject Areas of INSA Output

Subject Area	Docs
Computer Science	64
Social Sciences	61
Engineering	39
Multidisciplinary	37
Agricultural and Biological Sciences	27
Physics and Astronomy	24
Biochemistry, Genetics and Molecular Biology	22
Earth and Planetary Sciences	22
Chemistry	11
Medicine	11
Environmental Science	10
Chemical Engineering	9
Pharmacology, Toxicology and Pharmaceutics	9
Business, Management and Accounting	7
Materials Science	6
Mathematics	6
Decision Sciences	5
Energy	4
Arts and Humanities	3
Health Professions	1
Immunology and Microbiology	1
Nursing	1
Total	**214**

5. CONCLUSION

INSA recognizes outstanding young scientists, engineers and technologists through award of medals/ prizes and by providing modest financial support for pursuing research and keep in intermediary with science and non- science researchers/scientist in India. It has established exchange programmes with different overseas Academies to facilitate visits of Indian scientists' to research institutions abroad and of foreign scientists to India for lectures/scientific discussions.

It is an institutional study of scientiometrics, also a branch of sciences and applied the scientometrics tools by Scopus database for analyses the 214 documents for this study and reveals the result thatthe year wise break -up of the 37 years, 2014 produced the highest number of output with 20(9.35%) of records and ranked at first and found as there is an fluctuation trend of publications;the author wise analysis found 160 authors, among "Gupta, B.M." found as the top rank with 19(8.88%) of documents;the source wise analysis resulted 94 journals in which "Scientometrics" has scored 41(19.16%) of documents and ranked at top; the affiliation wise collaboration resulted 130 institutions, among them has shared by two "National physical laboratory of India" and "Indian Institute of Science" has scored 10(4.67%) of documents and occupied the first position;the subject area wise analysis found a total of 22 areas, among them "Computer Science" with 64 documents were found and ranked at top among the other subject areas;the various types of documents analysis found 8 items in which "Article" has scored with 162 publications and ranked at top;Whereas the country wise collaboration of INSA resulted 13 among them obviously "India" has identified as top rank with 202(94.39%) of documents.

REFERENCES

[1] https://en.wikipedia.org/wiki/Indian_National_Science_Academy Retrieved on 05/2/2016

[2] Dr. R. Duraipandi, "Mapping of Social Media Research Productivity: A Scientometric Study**",** International Journal of Library and Information Management, (peer-reviewed refereed & impact factor journal), Vol.7, No.1, Jan-June-2016, pp. 6-13.

[3] R. Duraipandi and R.Balasubramani, "Mapping the Research Productivity of Jawaharlal Nehru University: A Bibliometric Analysis based on Scopus Database", Star library Science, Vol.3, No.2,5, February 2015, pp.18-24.

[4] R. Duraipandi and R.Balasubramani, "Research Productivity of Indian Space Research Organisation (ISRO): A Bibliometric Analysis", International Journal of Recent Research and Applied Studies, Vol.2, No.3&6, March-2015, pp.20-25.

[5] R. Duraipandi, M. Surulinathi and K. Ankasetty, "Mapping the Indian Research Productivity on Seawater: A Scientometric Study", SALIS Journal of Information Management and Technology, Vol.4, No.1, January-June, 2013, pp. 16-21.

[6] M. Surulinathi, "Intellectual Assets of Annamalai University Researchers: A Scientometric Mapping using Web of Science Database", Indian Journal of Information Science and Services, Vol.1, No.2, 2008.

Use of Electronic Information Resources in Gandhigram Rural Institute Deemed University : A Study

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Abstract

This paper aims to determine the use of electronic information resources in the library of Gandhi gram Rural Institute Deemed University, Dindigul District in Tamilnadu. This study further intends to investigate the satisfaction of the research scholars and post graduate students towards the electronic information resources, advantage and disadvantage of electronic resources types of e-resources are discussed. This study traces out the status of electronic resources and internet based library services in the libraries of institutes. This study analyses the scope of the availability and accessibility of infrastructures like, hardware & software and collection development. The electronic resources such as DVD, CD, Audio cassettes and Video cassettes and their extent of availability could be accessed. The findings of this study suggests that access and use of electronic information resources is an vital component for the research studies of the users, the awareness and satisfaction of library e-resource and e-service facilities provide more satisfactory to the users and also suggests that the authorities of the deemed university libraries should maintain and update regularly the facilities based on the need of user community.

Keywords*: Academic Library, Deemed University, Electronic information; Resources, Library services*

1. INTRODUCTION

The development in Information and Communication Technology, the physical availability of books converted in to the digital media. Due to the information explosion and information technology revolution leads the emergence of electronic information era. The advancement in information processing, storage and communication technology have revolutionized the dissemination of information services. The growth of internet and enormous amount of availability of information in electronic forms necessitated the growth of electronic collections in libraries. Due to the adoption of new technologies the libraries were emerging to build the electronic collections and services by organizing, managing and disseminating the information.

The academic libraries today are having the provision of information and resources in electronic formats. Today libraries are providing electronic access to a wide variety of resources, including indexes, full-text articles, complete journals and Internet/Web resources. In general, libraries were migrating towards an electronic environment. Therefore the libraries were forced to change in their operation and activities in order to provide fast, integrated, interactive and comprehensive services to their users in order to provide up to date information.

It provides physical or digital access to material and may be confined in a physical building or a virtual place or both. Collections can include books, periodicals, newspapers, manuscripts, films, maps, prints, documents microform, CDs, cassettes, videotapes, DVDs, video games, e-books, e-journals, audio-books and other formats.

E-Resources are such as e-journals, e-books, online database, CD-ROM database and Internet that delivers a collection of data, be it text referring to full text basis, image collection, other multimedia products and numerical, graphical or time based. Electronic publishing has lead to new era of communications and information sharing. It creates opportunities for users as well as authors and publishers. Many of the electronic books or electronic publisher's web site freely permit and encourage readers to provide feedback on works, often directly to the author rather to the publisher. Moreover, since most relevant e-resources are now available through the web, users can have desktop access to them 24 hours a day.

Organising e-sources is one of the important and crucial works to provide services to the users of the library information system. In a modern digital library information system, the professionals should have skills like computing, database management, networking, and other management skills relating to IT environment. . Therefore it becomes necessary for the users of the academic libraries, how far they are access the electronic resources for their research activity. In this context an attempt has been made in the present paper to study the usage of electronic information resources in the Gandhigram Rural Institute Deemed University Library, Dindigul District, Tamilnadu.

2. LITRATURE REVIEW

Selvi and Dhanavandan(2012)[1] conducted the study and found that respondents were using internet every day, then once in a week and 82.22% of the respondents were used Google and 70.22%yahoo search engine. Coates (2013)[2] stated that the confusion regarding the nature of e-books slows adoption. While participants were exploring ways to incorporate e-books into their norms, values, and research practices, they are unlikely to rely solely on e-books as primary sources. Joanna Duy, Liwen Vaughan (2015)[3] revealed Vendor-provided electronic resource usage statistics are not currently standardized across vendors. This study investigated the feasibility of using locally collected data to check the reliability of vendor-provided data..

Debbie Malone, Carol HYPERLINK "http://www.sciencedirect.com/science/article/pii/S0734331097900355"Videon (2015)[4] found between instruction in the use of electronic resources and increased usage of these sources. Three institutions whose students used a number of electronic resources did provide useful teaching models for further study. Alia Arshad, KanwalHYPERLINK "http://www.emeraldinsight.com/action/doSearch?ContribStored=Ameen%2C+K" HYPERLINK "http://www.emeraldinsight.com/action/doSearch?ContribStored=Ameen%2C+K"Ameen HYPERLINK "http://www.emeraldinsight.com/action/doSearch?ContribStored=Ameen%2C+K"(2015)[5] revealed that the university library website was heavily used on campus by users; however, it was used by a significant number of clients residing off-campus. Free scholarly journals, resources downloaded, e-journals, e-books and donated personal collections were among the top most used resources and services. Mahapatra (2017)[6] has attempted to collect information related to the preferences on electronic information resources, types of e-resources used, the use of statistical information in e-format, online databases in social science and satisfaction on the use of e-resources.

3. PROFILE OF GANDIGRAM RURAL INSTITUTE-DEEMED UNIVERSITY

The Gandhigram Rural Institute founded in 1956, is situated near Dindigul in Tamil Nadu, India. Dr.T.S.Soundaram and Dr.G.Ramachandran developed the institute. The institute was founded there in 1956 to carry on Mahatma Gandhi's 'Nai Talim' system of education. In 1976 it was declared as Deemed University, by University Grants Commission (UGC), New Delhi, Under Section 3 of UGC Act 1956. The work of the institute invited national attention and the Government of India (Ministry of Education), on the recommendation of the University Grants Commission, conferred the status of a Deemed University on the institute under Section (3) of the UGC Act of 1956, on 3 August 1976.

The institute has developed into a major educational complex, comprising seven faculties, offering in 50 programmes. It has 3000 students and 150 teaching and 250 non-teaching staff. The Gandhigram Rural Institute has a campus of nearly 200 acres in a rural setting, nestling in one of the enclaves of the beautiful Sirumalai range.

4. NEED FOR THE STUDY

This study aims to trace out the status of electronic resources and internet based library services in the Gandhi Gram Rural Institute Deemed University Library. This study analyses the scope of the availability and accessibility of infrastructures like, hardware & software and collection development. The electronic resources such as DVD, CD, Audio cassettes and Video cassettes and their extent of availability could be accessed. Further it deals the usage analysis about the web e-resources and tools and while using libraries to access the e-resources and library services, which includes various issues like important of electronic resources, purpose behind using the e-resources, advantages and disadvantages and its level of dependency, identification of suggestion and find out the constraints while using e-resources. The academic community depends on e-resources and e- services to develop their academic stream and professionals attitudes.

5. OBJECTIVES OF THE STUDY

The following objectives are framed for the purpose of the present study.

- To identify the awareness on e-resources and e-services
- To assess the awareness on search engine you used to get the information
- To identify the purpose of using e-resources
- To know the frequently of used e-resources
- To identify the performance of the e-resources and e-services offered by the library
- To find out the level satisfyed with the other facilities in the library

6. METHODOLOGY

The researcher has collected relevant data from the post graduate students, M.Phil and Ph.D Research Scholars in Gandhigram Rural Institute(GRI), Totally 400 questionnaires were distributed to the respondents, 347 were responded. The response rate is 87%. The data thus collected over and the same has been analysed using SPSS. The analysis were made based on the category of the respondents. To test the hypotheses, chi-square test, Mean, Garret Ranking and Standard Deviation are applied besides percentile analysis. The diagrammatic and graphical representations of the data are also presented for visualizing the data.

7. LIMITATIONS OF THE STUDY

The findings of this study based on the information provided by post graduate students, M.Phil and Ph.D Research Scholars in Gandhigram Rural Institute deemed universities in Tamil Nadu. Totally, 347 post graduate students, M.Phil and Ph D Research Scholars, alone were taken up for the study. This study is mainly based on the awareness of e-resources and e-services among users of the university.

7.1 Sample Size

The Distribution of Questionnaires among the respondents from the Gandhi Gram Institute Deemed University Tamil Nadu in post graduate students, M.Phil and Ph D Research Scholars has been analysed based on the opinions and it is shown in the table. 1

Table 1 shows the distribution of questionnaires to the respondents from the Gandhi Gram Institute Deemed University Tamil Nadu in post graduate students, M.Phil and Ph D Research Scholars. Totally 400 questionnaires were distributed and out of 400, 347 replied after duly filled by the respondents. The response rate is 87.00%.

7.2 Purpose of Visit to the Library Vs Institute

Table 2 that the respondents have given first priority for the purpose of 'To Borrow and return Books'. 'To access e-resources' and 'To read newspapers' are the purposes to visit the library and the second and third preference given for them by the respondents. The least preference was given for the 'To consult print documents'. The mean value of all the variables ranges between 3.73 and 4.02. It can be inferred that all the six variables lies between 'Strongly Agree' and 'Agree'. The deviation of opinion ranges between 1.116 and 1.366.

Further, Chi square has been administered to identify the significance. The calculated value has been shown in Table 4.5. The table value is 15.507 at 5% level of significance, the calculated value for all the values were lower than the table value which indicated the variables are not significant in their difference of opinion between the categories of institutes towards purpose of the visit to the library.

Table 1 Distribution of Questionnaires among the PG.,M.Phil/Ph.D Scholars

Sl. No.	Questionnaires Distributed	%	Questionnaires Received	%
1	400	100	347	87.00

Table 2 Purpose of Visit to the Library Vs Institute

Sl. No.	E-Resource	GRI			Chi-Square
		M	SD	R	
1	To Borrow and Return Books	4.02	1.116	1	6.310
2	To Read News Paper	3.80	1.215	3	8.163
3	To Consult Print Documents	3.73	1.302	6	13.215
4	To Access E-Resources	3.81	1.280	2	10.413
5	To Enhance My Knowledge	3.75	1.366	4	7.426
6	All the Above	3.74	1.343	5	7.371

(M-Mean, SD-Standard Deviation, R-Rank, Degrees of freedom = 8, Table Value = 15.507)

7.3 Frequency of Awareness on E-Resources

The Frequency of Awareness on E-Resources among the respondents in the university has been analyses based on the opinion and responses which is shown in the table 3.

It is revealed from the table 3 shows that the frequency of awareness of the E-Resources with their category of the Institute. The frequency of awareness of the E-Resources to the Library was categories as follows: 'Below 1 yrs', '1-2 yrs', and '2-3 yrs', '3-4 yrs and 'More than 4 yrs'. From the institute of GRI, 17 (1.63%) were got the awareness on E-Resources 'Below 1 yrs', 20(1.92%) were got the awareness on E-Resources '1-2 yrs' were got the awareness on E-Resources, 32(3.07%) were got the awareness on E-Resources '2-3 yrs', 126(12.07%) were got the awareness on E-Resources '3-4 yrs and 172(16.48%) were got the awareness on E-Resources 'More than 4 yrs'.

Table 3 Frequency of Awareness on E-Resources

Sl. No.	Frequency	No. of Respondents
1	Below 1 yr.	17 (1.63)
2	1-2 yrs.	20 (1.92)
3	2-3 yrs.	32 (3.07)
4	3-4 yrs.	126 (12.07)
5	More than 4 yrs.	172 (16.48)
	Total	367 (35.15)

(Figures in the parentheses denote percentage)

7.4 Methods Used to Access E-Resources

The study has been further extended to category of the institute for the methods used to access e-resources by the respondents in select deemed universities. The Mean, Standard Deviation and their Rank for suggestions have been calculated and shown in table 4.24.

It is shown from Table 4 that the respondents in GRI have given first priority for the method of 'Guidance by teachers/Supervisor'. 'Guidance by library staff' and 'Library brochures' are the second and third preference given by the respondents. The least preference was given for the 'Trial and error method'. The mean value of all the variables ranges between 3.85 and 4.19. It can be inferred that all the five variables lies between 'Strongly Agree and 'Agree'. The deviation of opinion ranges between 1.036and 1.283.

Table 4 Methods Used to Access E-Resources

Sl. No	Description	GRI			Chi-Square
		M	SD	R	
1	Trial and Error Method	3.85	1.283	5	12.372
2	Guidance by Friends/Colleagues	3.86	1.175	4	11.058
3	Guidance by Library Staff	4.03	1.239	2	11.139
4	Guidance by Teachers/Supervisor	4.19	1.036	1	12.424
5	Library Brochures	3.94	1.164	3	10.558

(M-Mean, SD-Standard Deviation, R-Rank, Degrees of Freedom: 8, Table Value: 15.507)

7.5 Awareness on E-Resources and E-Services

The study has been analyses the Awareness on E-Resources and E-Services among the respondents in select deemed universities. The five point scales of Not aware, Marginally, Moderately, Not aware, completely were used for the study. The Mean, Standard Deviation and their Rank for Awareness on E-Resources have been calculated and it is shown in the table 4.

It is identified from Table 4 that the respondents have given first priority for the e-resources and e-resources through 'Institution Website'. 'Library orientation programme' 'Friends and colleagues' were for second and third preference given by the respondents. The least preference was given for the 'Self-awareness'. The mean value of all the variables ranges between 3.80 and 4.01. It can be inferred that all the six variables lies between 'Strongly Agree and 'Agree'. The deviation of opinion ranges between 1.083 and 1.271.

Table 5 Awareness on E-Resources and E-Services

Sl. No.	Description	Not Aware	Marginally	Moderately	Not Aware	Completely	M	Std. Dev.	R
1	Library Orientation Programme	55 (5.27)	77 (7.38)	74 (7.09)	55 (5.27)	349 (33.43)	3.96	1.083	2
2	Friends and Colleagues	76 (7.28)	91 (8.72)	82 (7.85)	76 (7.28)	428 (41)	3.94	1.221	3
3	Institution Website	88 (8.43)	67 (6.42)	82 (7.85)	88 (8.43)	489 (46.84)	4.01	1.250	1
4	Research Guide	86 (8.24)	99 (9.48)	76 (7.28)	86 (8.24)	422 (40.42)	3.89	1.260	4
5	E-mail Notification from Library	103 (9.87)	80 (7.66)	72 (6.9)	103 (9.87)	389 (37.26)	3.85	1.271	5
6	Self-Awareness	101 (9.67)	54 (5.17)	115 (11.02)	101 (9.67)	320 (30.65)	3.80	1.207	6

8. CONCLUSION

In this study since the electronic resources as well as the digital resources are more important for the academic and research activities. Hence, efforts should be made to develop and extract the access modes to the end users. Presently all are living the digital and paper less society. Hence there is a need to increase the web based services in library activities to all the institutions. The awareness and satisfaction of library e-resources and e-services facilities are more satisfactory. But they will maintain and update regularly based on the need of user community.

REFERENCES

[1] M. Selvi and S. Dhanavandan, "A Study on the Utilization of Interne Resources and Tools by Basic Medical Science Professionals", Journal of Emerging Trends in Computing and Information Sciences, Vol.3, No.12, 2012, pp.1634-1637.

[2] H. Coates, "Academic Historians in Canada Report both Positive and Negative Attitudes towards E-books for Teaching and Research", Evidence Based Library and Information Practice, Vol.8, No.4, 2013, pp.148-150.

[3] Joanna Duy, Liwen Vaughan, "Usage Data for Electronic Resources: A Comparison between Locally Collected and Vendor-provided Statistics", The Journal of Academic Librarianship, Vol.29, No.1, 2015, pp.16-22.

[4] Debbie Malone, Carol HYPERLINK "http://www.sciencedirect.com/science/article/pii/S0734331097900355"Videon (2015). Assessing undergraduate use of electronic resources: A quantitative analysis of works cited, Research Strategies, Vol.15, No.3, pp.151-158.

[5] AliaArshad,KanwalHYPERLINK",http://www.emeraldinsight.com/action/doSearch?ContribStored=Ameen%2C+K" HYPERLINK "http://www.emeraldinsight.com/action/ do Search? Contrib Stored = Ameen% 2 C + K" , AmeenHYPERLINK "http://www.emeraldinsight.com/action/do Search?Contrib Stored = Ameen % 2 C+K" , (2015). Usage patterns of Punjab University Library website: a transactional log analysis study, The Electronic Library, Vol.33, No.1, pp.65-74.

[6] R.K. Mahapatra, "Use of E-Resources among Social Scientists in Selected Institutes in Bhubaneswar: A Study", International Journal of Information Dissemination and Technology, Vol.7, No.2, 2017, pp.102-106.

Usage Pattern of Web Browsers for Accessing Internet by Selected University Library Users: An Evaluating Study

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Abstract

This study attempts to find the preferences and importance of using web browsers online resources among the various university library users. The Internet and the Web are constantly influencing the development of new modes of scholarly communication; their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Further, the distribution time between product publication and its delivery has been drastically reduced. The Internet can be used for efficient retrieval and meeting information needs.

Keywords: *Electronic Resources, Electronic Databases, Internet, Information Literacy, Standard Deviation, University libraries*

1. INTRODUCTION

All types of Libraries are implementation various digital collections, although most libraries will continue to offer both print and digital collections. Some specific digital collections are only beginning to become a presence in library collections. Libraries are preferred digital collections for many reasons, such that, access can be from the user's home, office, or dormitory whether or not the physical library is open; the library can get usage statistics that are not available for print collections; and digital collections save space and are relatively easy to maintain. When total processing and space costs are taken into account, electronic collections may also result in some overall reductions in library costs (Montgomery and King 2002). Many researchers have attempted to predict or measure that impact through surveys, transaction log analysis, and other research techniques. The opinion literature outnumbers the research literature, and it may be a challenge to distinguish fact from opinion. This study used to find the users' interest to web browser for browsing required their information through internet. Researcher has taken data for analysis, gender wise, faculty wise and status wise. So many types of web browsers are there on internet, but here selected and most familiar web browsers are set the questionnaire and analyzed. Such web browsers are: Internet Explorer, Opera, Mozilla fire fox, Google Chrome, Netscafe Navigator, MSN explorer, IBM web explorer, Apple-safari, Seamonkey, Maxthon, Konqueror, K-Meleon, Power Browser, Flock, Prism, Deepnet explorer, Avant, OX S, Cameno, Shiira, Omniweb, icab, Stainless, Fluid, Galeon, Epiphany, Swiftfox, Swift weasel and other web browsers. Users were used simultaneously so many web browsers, here the following analysis were clearly explained.

2. DEFINITION OF WEB BROWSER

Web browser, a software application used to locate, retrieve and also display content on the World Wide Web, including Web pages, images, video and other files. As a client/server model, the browser is the client run on a computer that contacts the Web server and requests information. The Web server sends the information back to the Web browser which displays the results on the computer or other Internet-enabled device that supports a browser.

2.1 The Purpose of a Web Browser

Web browser's main purpose is to display websites - images, graphics, text, videos, audios any other Medias stored on the web server onto your PCs or laptop screen. Professional web designers and developers design Web sites in a way that they look and display consistently in almost every browsers. Browsers should display online Web pages in an organized fashion, allowing easier navigation and viewing. Clients browsing the internet queries for specific results. Web browsers must be able to query pages on the Web server and serve them on the

client's browser window. In other words, Browsers read HTML documents, although they don't display HTML tags and display Web pages by interpreting tags inside those documents properly.

- .com for commercial;
- .edu for educational;
- .org for other organizations;
- .gov for government;
- .mil for military;
- .net for internet service providers;
- .biz for business;
- .info for information.

2.2 Functions of a Web Browser

The primary functions of a web browser are to retrieve or fetch information to the user, allow them to view it, and access information. The user clicks on the Uniform Resource Locator (URL) into the browser – for example, http://www.gmail.com. The prefix, the Uniform Resource Identifier, used in the URL determines how the URL be inferred. Usually, URI starting with http: indicates a resource to be fetched over the Hypertext Transfer Protocol – HTTP. Other prefix include https: for HTTPS, ftp: for File Transfer Protocol, and file: for local files. Once the resource has been located, the web browser should display it. HTML and its associated contents such as images, audios, and videos are displayed interpreting the formatting information such as CSS before it is passed to the *rendering* engine to display correctly on the browser.

2.3 Components of a Web Browser

If we look closer to each browser, all of them have these component common to them:

1. **Address Bar:** Address bar is a wide box at the top of the browser window that span across almost third of the screen. Here, you type in web address, or URL to visit the target website.
2. **Title bar**: At the very top of the browser window, Title bar displays the title of a Web page currently being viewed.
3. **Navigation Toolbar**: Underneath the title bar, frequently used shortcut tools are placed in the Navigation toolbar. This is where you'll see Back, Home, and Refresh buttons, among others.
4. **Workspace**: The display window is the space where you are reading the content now.
5. **Scroll bars:** Scroll down the bars using your mouse by clicking and pulling it down if they web page is longer than the screen space.
6. **Status Bar**: A tiny box at the bottom of the browser window, Status bar displays important information – pages load status, URL of the Web address, etc.

Apart from Web pages, browsers are capable of generating any type of content that is the part of the HTML page. Almost every browser can render audio, video, images, and XML files and are equipped with Flash and PDF readers, and Java applets. Browsers also lets user download a files from the server and save it on your hard drive. Web browser is the software which is required to access the web pages on the Internet. With the advancement in the technology everyday new features are being added to the web browsers. There was a time when the majority of the people were using the Internet Explorer for accessing the World Wide Web. Its dominance was so strong that it had the market share of about 95%. But with the release of many new web browsers this share has considerably declined. Today we have so many web browsers available to us for use on different operating systems. The user has the option to select and use the web browser according to his wish and desire. We have here made a list of the top ten such web browsers in the world which are best. This article will help you if you are in a need of a good web browser which may process your entire request with added security and features.

2.4 Previous Studies

Borrego, et.al. (2007) observes that there have been many studies of users of electronic resources in the professional literature in the last few years. In a recent exhaustive review of the literature on the subject, Tenopir et.al.,(2003) analyzed the results of over 200 studies of the use of electronic resources in libraries published between 1995 and 2003. The main conclusion of this review is that electronic resources have been rapidly adopted in academic spheres, though the behaviour varies according to the discipline. In a significant study Jamali, Nicholas, and Huntington (2005) presented the conclusions of several studies that used log analysis to study the use and users of electronic journals. These papers focused the formats preferred by the end users where it was documented that the users prefer the PDF rather than HTML format.

2.5 Sampling and Delimitation of the Study

In Tamil Nadu there are a total of 46 universities, out of 46, 24 are State universities. Out of which 24 state universities are accredited by NAAC, Out of 24 universities, nine universities were selected on the basis of convenient by sampling. The researcher has been distributed each 500 questionnaires among the selected universities on random sampling and as per the requirement of the objectives of the present study. The scholar requests the university library users (faculties and Research Scholars) to fill the questionnaire as per their convenience and returned the questionnaire to the investigator as early as possible. The filled up questionnaire has been collected from the respondents for the data analysis and interpretation. Total Sample is 3698. The random sampling techniques was adapted to selected respondents has been tabulated and in the present report results have been shown in the tabular format.

3. OBJECTIVES OF THE STUDY

The Primary objectives of the study are to identify the usage of electronic resources amongst the faculty members and researchers scholars of selected Taminadu university Library users. The specific objectives of the present investigations are:

- To identify the age groups and gender status of Library users;
- To identify preferred different types of web browsers;

4. DATA ANALYSIS AND INTERPRETATION/ DISCUSSION

The data collected were carefully analyzed and processed. The analysis of collected data has been tabulated and in the present report results have been shown in the tabular format.

Table 1 reveals that the number respondents from the various universities, MK University, Madurai having more number of respondents and Mother Teresa women's University having less number of respondents. Bharathidasan University, Trichirapalli has 12.93 percentages of respondents. Remaining universities were having more than 11 percentages of respondents except the Periyar University, Salem.

Table 1 Respondents of Selected Universities from Tamilnadu

Sl. No.	Selected Universities	No. of Respondents	%
1	Annamalai University, Cuddalore	432	11.68
2	Alagappa University, Karaikudi	416	11.25
3	Bharathiar University, Coimbatore	410	11.09
4	Bharathidasan University, Trichirapalli	478	12.93
5	Madurai Kamaraj University, Madurai	485	13.12
6	University of Madras, Chennai	427	11.55
7	Manomaniam Sundamar University	390	10.55
8	Periyar University, Salem	345	9.33
9	Mother Teresa Women's University	315	8.52
	Total	**3698**	**100**

4.1 Age and Gender-wise Analysis

The age factor is importantly used for find out the information seekers thrust. Four types of age groups are segregated; such that below 35 years, between 36 - 45 years, between 46 - 55 years and above 56 years. This analysis is helps to identify which age group respondents were having information requirement more. The table value reveals male respondents are more than female respondents. Totally 3698 respondents were responded this questionnaire. Out of 3698, 2228 (60.24 %) of male respondents and 1470 (39.76 %) of female were responding the questionnaire and given back filled questionnaire. 25.82 percents of respondents were below 35 age group users', i.e., one fourth of respondents were youth. 27.99 percents of users were been the age group of between 36 - 45 years. 25.88 percents of respondents were been the age group of between 46 - 55 years and remaining 20.31 percents of users were belongs to the age group of above 56 years.

Among 3698 respondents' 36 - 45 years age group (27.99 %) respondents are more than others, followed by 46-55 years (25.88 %) age grouped, below 35 years (25.82 %) age grouped and above 56 years (20.31 %) age groups respondents respectively.

Found from gender-wise analysis, male (29.26 %) and female (26.05 %) respondents were high in the age group of 36 - 45 years. Gender wise, male respondents' mean value is 557, SD value is 107.83 and its CV value is 19.36. Female respondents' mean value is 367.5, SD value is 14.201 and its CV value is 3.86.

Overall age groups mean value is 924.5, SD value is 121.52 and CV value is 13.14. Below 35 age group respondents' means value is 477.5, SD value 149.2 and its CV value is 31.2; between 36 - 45 years age group users mean value is 517.5, SD value is 190.21 and its CV value is 36.75; between 46 - 55 years age group users mean value is 478.5, its SD value is 159.1 and its CV value is 33.25 and above 56 years age group users mean value is 375.5, its SD value is 37.47 and its CV value is 9.98.

It could be seen from data that all the respondents were young; the majority of age group is 36 to 45 years (27.99 %). The results shows the young generation has more interested to improved their research activities for getting current information and further academic developments for themselves.

Table 2 Distribution of Respondents Based on their Age and Gender

Sl. No.	Particulars	Male (n=2228)		Female (n=1470)		Total (n=3698)				
		No.	%	No.	%	No.	%	Mean	SD	CV
1	< 35 Years	583	26.17	372	25.31	955	25.82	477.5	149.2	31.2
2	36 - 45 Years	652	29.26	383	26.05	1035	27.99	517.5	190.2	36.75
3	46 – 55 years	591	26.53	366	24.90	957	25.88	478.5	159.1	33.25
4	> 56 years	402	18.04	349	23.74	751	20.31	375.5	37.47	9.98
Total		**2228**	**60.2**	**1470**	**39.76**	**3698**	**100**			
Mean		**557.0**		**367.5**		**924.5**				
SD		**107.83**		**14.201**		**121.52**				
CV		**19.36**		**3.86**		**13.14**				

4.2 Gender-wise Preferred Web Browsers

Table 3 exposed that the gender-wise preferred the web browser for getting their required information from internet. Based on five point scale ranking out of 3698 respondents, 99.7% of users were preferred the Google chrome web browser, 93.4% of respondents were mentioned the Opera web browser, 90.7 percents of them are identified their information from internet using through Mozilla Fire Fox, 79.1% of respondents were also getting information using Internet explorer web browser, and 67.9% of respondents were using Netscafe Navigator web browser respectively. Remaining web browsers were has below 55% of usage respondents. Overall respondents mean value is 779.83, SD value is 1214.02 and its CV value is 155.68.

Out of 2228 male respondents, 99.6 percents of respondents were mentioned they have frequently used Google chrome web browser. 98.7% of respondents were used Opera, 95.5% of users were used Mozilla Fire Fox, 79.2 % of respondents were used Internet Explorer and remaining browsers were preferred by sample respondents used below 60% respectively. Overall male respondents mean value is 464.38, its SD value is 745.18and its CV value is 160.47.

Out of 1470 female respondents, 99.8% of respondents were mentioned they have frequently used Google chrome web browser. 85.4 percents of respondents were used Opera, 83.5 % of users were used Mozilla Fire Fox, 78.9 percentage of respondents were used Internet explorer, 80.9 percentage of respondents were used Netscafe Navigator and remaining browers were preferred below 60 percents of users respectively. Overall female respondents mean value is 315.45, its SD value is 473.22 and its CV value is 150.08.

Table 3 Gender-wise Respondents Preferred Web Browsers

Sl. No.	Particulars	Male (n=2228)		Female (n=1470)		Total (n=3698)			
		No.	%	No.	%	No.	%	Mean	SD
1	Google Chrome	2219	99.6	1467	99.8	3686	99.7	1843	531.74
2	Opera	2199	98.7	1255	85.4	3454	93.4	1727	667.51
3	Mozilla fire fox	2127	95.5	1227	83.5	3354	90.7	1677	636.39
4	Internet Explorer	1764	79.2	1160	78.9	2924	79.1	1462	427.09
5	Netscafe Navigator	1321	59.3	1189	80.9	2510	67.9	1255	93.33
6	MSN explorer	1176	52.8	861	58.6	2037	55.1	1018.5	222.74
7	IBM web explorer	1062	47.7	543	36.9	1605	43.4	757.5	430.63
8	Apple-safari	197	8.8	175	11.9	372	10.1	186	15.55
9	Seamonkey	128	5.7	162	11.0	290	7.8	145	24.04
10	Maxthon	114	5.1	132	9.0	246	6.7	123	12.73
11	Konqueror	102	4.6	93	6.3	195	5.3	97.5	6.36
12	K-Meleon	97	4.4	82	5.6	179	4.8	89.5	10.61
13	Power Browser	65	2.9	78	5.3	143	3.9	71.5	9.192
14	Flock	78	3.5	72	4.9	150	4.1	75	4.24
15	Prism	75	3.4	70	4.8	145	3.9	72.5	3.54
16	Deepnet explorer	86	3.9	68	4.6	154	4.2	77	12.73
17	Avant	93	4.2	61	4.1	154	4.2	77	22.63
18	OX S	82	3.7	58	3.9	140	3.8	70	16.97
19	Cameno	79	3.5	53	3.6	132	3.6	68.5	14.85
20	Shiira	65	2.9	51	3.5	116	3.1	59	8.48
21	Omniweb	58	2.6	49	3.3	107	2.9	54.5	4.95
22	Icab	47	2.1	44	3.0	91	2.5	48	1.41
23	Stainless	43	1.9	38	2.6	81	2.2	43.5	0.71
24	Fluid	40	1.8	34	2.3	74	2.0	37	4.24
25	Galeon	36	1.6	31	2.1	67	1.8	33.5	3.54
26	Epiphany	33	1.5	29	2.0	62	1.7	31	2.83
27	Swiftfox	30	1.3	25	1.7	55	1.5	27.5	3.54
28	Swift weasel	29	1.3	23	1.6	52	1.4	27	2.83
29	Others	22	1.0	18	1.2	40	1.1	22.5	0.71
Mean		**464.38**		**315.45**		**779.83**			
SD		**745.18**		**473.422**		**1214.02**			
CV		**160.47**		**150.08**		**155.68**			

From anova test F values: 17.34 and 7.56
Table values: 1.88 and 4.19.

The F values are 17.34 and 7.56 are greater than the table values of 1.88 and 4.19, so there is significant between the male and female respondents preferred in the web browsers. Usage of Internet explorer web browsers mean value is 1843 and its SD value is 531.74, Opera's mean value is 1727 and its SD value is 667.51, Mozilla Firefox mean value is 1677 and its SD value is 636.39, Google chrome mean value is 1462 and its SD value is 427.09, Netscafe Navigator mean value is 1255 and its SD value is 93.33 respectively.

It is found from the above analysis, most of the respondents (including male and female) were preferred the web browsers of Google Chrome, Opera, Mozilla firefox, Internet Explorer and Netscafe Navigator.

4.3 Faculty-wise preferred web browsers

Table 4 reveals that the faculty wise preferred the web browser for getting their required information from internet. Out of 3698 respondents, 99.3 percent of users were preferred the Google chrome web browser, 97 percent of respondents were mentioned the Opera web browser, 89.5 percent of them are identified their information from internet using through Mozilla Fire Fox,

84.4% of respondents were also getting information using Internet explorer web browser, and the remaining faculty preferred other types of browsers are below 60 percents. These above mentioned web browsers are familiar to users' side. Becoming web browsers also there for browsing, but people preferred less level compare than familiar browsers. Overall respondents mean value is 758.69, SD value is 1208.16 and its CV value is 159.24.

Out of 1923 Social Science respondents, 99.3 percentages of respondents were mentioned they have frequently used Google chrome web browser. 98.4 percents of respondents were used Opera, 96.9 % of users were used Mozilla Fire Fox, 93.4 percentage of respondents were used internet explorer, 53.5 percentage of respondents were used Netscafe Navigator, and web browsers were used by Social Science respondents' value is below 10 percentage only. Overall male respondents mean value is 408.9, its SD value is 651.53 and its CV value is 159.33.

Out of 1775 Science respondents, 99.3 percentages of respondents were mentioned they have frequently used Google chrome web browser. 95.5 percents of respondents were used Opera, 81.5 % of users were used Mozilla Fire Fox, 74.6 percentage of respondents were used internet explorer, 62.4 percentage of respondents were used Netscafe Navigator, 46.4 percentage of users were used MSN Explorer, Overall Science faculty respondents mean value is 349.79, its SD value is 559.14 and its CV value is 159.89.

Table 4 Faculty-wise Distribution of Respondent's Use of Browser

Sl. No.	Particulars	Social Science (n=1923)		Science (n=1775)		Total (n=3698)		Mean	SD
		No.	%	No.	%	No.	%		
1	Google Chrome	1909	99.3	1763	99.3	3672	99.3	1836	103.24
2	Opera	1892	98.4	1695	95.5	3587	97.0	1793.5	139.3
3	Mozilla fire fox	1863	96.9	1446	81.5	3309	89.5	1654.5	294.86
4	Internet Explorer	1797	93.4	1324	74.6	3121	84.4	1560.5	334.46
5	Netscafe Navigator	1029	53.5	1107	62.4	2136	57.8	1068	55.15
6	MSN explorer	941	48.9	823	46.4	1764	47.7	882	83.44
7	IBM web explorer	826	43.0	661	37.2	1487	40.2	743.5	116.67
8	Apple-safari	273	14.2	252	14.2	525	14.2	262.5	14.85
9	Seamonkey	144	7.5	127	7.2	271	7.3	135.5	12.02
10	Maxthon	132	6.9	121	6.8	253	6.8	126.5	7.78
11	Konqueror	125	6.5	82	4.6	207	5.6	103.5	30.4
12	K-Meleon	86	4.5	79	4.5	165	4.5	82.5	4.95
13	Power Browser	66	3.4	47	2.6	113	3.1	56.5	13.44
14	Flock	71	3.7	52	2.9	123	3.3	61.5	13.44
15	Prism	69	3.6	54	3.0	123	3.3	61.5	10.6
16	Deepnet explorer	62	3.2	51	2.9	113	3.1	56.5	7.78
17	Avant	73	3.8	65	3.7	138	3.7	69	5.66
18	OX S	79	4.1	57	3.2	136	3.7	68	15.56
19	Cameno	72	3.7	64	3.6	136	3.7	68	5.66
20	Shiira	56	2.9	41	2.3	97	2.6	48.5	10.61
21	Omniweb	51	2.7	37	2.1	88	2.4	44	9.89
22	icab	43	2.2	32	1.8	75	2.0	40	4.24
23	Stainless	40	2.1	29	1.6	69	1.9	36	5.66
24	Fluid	37	1.9	24	1.4	61	1.6	26.5	14.85
25	Galeon	29	1.5	28	1.6	57	1.5	28.5	0.71
26	Epiphany	29	1.5	25	1.4	54	1.5	27	2.83
27	Swiftfox	25	1.3	23	1.3	48	1.3	24	1.41
28	Swift weasel	21	1.1	19	1.1	40	1.1	20	1.41
29	Others	18	0.9	16	0.9	34	0.9	17	1.41
Mean		**408.9**		**349.79**		**758.69**			
SD		**651.53**		**559.14**		**1208.16**			
CV		**159.33**		**159.89**		**159.24**			

From Anova test F value: 99.9 and 6.93 Table value: 1.88 and 4.19

The F values are 99.94 and 6.94 are greater than the table values of 1.88 and 4.19, so there is significant between the Social Science faculty respondents and Science faculty respondents preferred in the various web browsers. It is found from the above analysis, most of the respondents (including Social Science and Science) were preferred the web browsers of Google Chrome, Opera, Mozilla firefox, Internet Explorer and Netscafe Navigator.

4.4 Trends in Browser Usage

Statistics are important information, from the statistics below (collected from W3Schools' log-files since 2002), you can read the long term trends of browser usage. We see that Google Chrome, Firefox, and Internet Explorer are the most used browsers today. Table 5 reveals the results of Google chrome, Mozilla Firefox and internet explorer were the leading web browsers, and it's taken from internet w3schools log website.

Table 5 Browser Statistics from W3Schools' log

Year	Internet explorer	Mozilla firefox	Chrome	Safari	Opera
2014	10.2	26.9	**55.7**	3.9	1.8
2013	12.08	28.02	52.61	3.94	1.75
2012	17.2	34.06	41.41	4.25	2.18
2011	23.48	40.97	28.56	3.99	2.43
2010	31.75	45.65	15.98	3.69	2.21
2009	40.52	46.94	6.28	3.3	2.22

5. SUGGESTION

The following suggestions were derived from the above discussions;

- Select the right search tool or techniques;
- Use Boolean operators;
- Use advanced search operators;
- Use metasearch engines;
- Use specialty search engines;
- Use subject directories;
- Search Intuitively;
- Deep Web; and
- Use social search.

6. CONCLUSION

There are several reasons for using internet by the users from various faculty members and research scholars are given below: Internet resources can be accessed from different location; Internet resources are very easy to access; Internet can be accessed to full text from remote place; Internet resources are very much user-friendly interface; Through the Internet library can able to sharing their resources; internet information leads every day's needs. From this analysis, Google Chrome; Opera; Mozilla Fire Fox; Internet Explorer and Netscafe Navigator web browsers are used by majority of users. From internet statistics also showed the web browser used by users are Google Chrome; Mozilla Fire Fox; Internet Explorer; Safari and Opera. User can easily access internet for accessing electronic resources for their academic purposes and it helps the library to meet the changing needs and expectations of the library users; and this study used to the effective helps libraries in performing their housekeeping operations and services efficiently. In library computer technology and electronic resources are likely to become increasingly popular amongst the users, as these resources bring about qualitative improvement in library functioning and services and make information access easy, accurate and comprehensive.

REFERENCES

[1] N. Amsaveni, P.Ashok Kumar and R. Balasubramani, "Use and Impact of UGC-INFONET Consortium Resources Using the Science Scholars of Bharathidasan University, Tiruchirappalli - A Survey", Journal of Advances in Library and Information Science, Vol.2, No.3, 2013, pp.138-141.

[2] A. Borrego, *et al.* "Use and Users of Electronic Journals at Catalan Universities: The Results of a Survey", Available from AGORA database http://

www.agInternetwork.org., Journal of Academic Librarianship, Vol.33, No.1, 2007.

[3] M.S. Chandran, "Health Care Information Seekers Aren't Typical Internet Users", Medicine on the Net, Vol.4, No.2, 1998, pp.17-18.

[4] Hamid R. Jamali, David Nicholas, Paul Huntington, "The Use and Users of Scholarly E-journals: A Review of Log Analysis Studies", ASLIB Proceedings, Vol.57, No.6, 2005, pp.554-571.

[5] http://www.w3schools.com/browsers/browsers_stats.asp

[6] http://www.webopedia.com/TERM/B/browser.html

[7] D. Kamlavijayan, "Internet for Libraries", Kelpro Bulletin, Vol.5, No.1, 2001, pp.45-48.

[8] Y.U. Kumar and N. Amsaveni, "Use of Library Resources and Services by the Students of Aided Minority Christian Autonomous Degree Colleges of Bengaluru: A Study", International Journal of Information Dissemination and Technology, Vol.5, No.4, 2015, pp.239-242.

[9] M. Madhusudan, "Use of UGC Infonet E-journals by Research Scholars and Students of University of Delhi, Delhi", Library Hi Tech, Vol.26, No.3, pp.369-386.

[10] A.Manimekalai, R.Balasubramani and N.Amsaveni, "Internet Use Pattern Among the Students in Annamalai University", SRELS Journal of Information Management, Vol.43., No.3, 2006, pp.265-270.

[11] S.P. Singh, "Internet and Role of Library", Journal of Library & Information Science, Vol.25, No.1, 2000, pp. 27-37.

[12] Sinha and Manoj Kumar, "A Study on ICT and Internet Awareness Amongst the Research Scholars and University Teachers: A Case Study", INFOLIB, Vol.2, No.1-4, 2009, pp.8-18.

[13] C. Tenopir, D.W. King, P. Boyce, M.G rayson, Y. Zhang and M. Ebven, "Patterns of Journal Use by Scientist Through Three Evolutionary Phases", D-Lib Magazine. , Vol.9, No.5, (http://www.dlib.org/dlib/may03/king/05king.html), 2003.

Information Access Pattern of Teaching Staff and Students of Arts College Libraries in Manonmaniam Sundaranar University, Tirunelveli

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Abstract

This paper attempts to examine the pattern of library use and identify gap in the usage of library, to make book selection systematic, to evaluate the resources sharing with other libraries and to understand the different services rendered by the libraries of Arts and Science Colleges affiliated to Manonmaniam Sundaranar University, Tirunelveli, Hypotheses were set and tested for the validity of the statements.

Keywords: *Bibliographical Questionnaire, Circulation Service, Users, Resources*

1. INTRODUCTION

Manonmaniam Sundaranar University was established in 1990 by the Government of Tamil Nadu, as a teaching-cum-affiliating University. The University is named after the Tamil poet literature Prof. P. Sundarampillai (1855 – 1897) who is the author of the famous verse drama, Manonmaniam, The University caters to the needs of the three southern districts of Tamil Nadu viz., Tirunelveli, Thoothukudi and Kanyakuari. About seventy six thousand students are studying in various departments in the University and in the 62 affiliated Arts and science Colleges. For the purpose of the study, the colleges are classified under three categories viz Aided College 25 (A), Autonomous and Aided (AA) Colleges of number and self Financed (SF) (AA) Colleges 28, Two colleges are government owned Colleges.

2. STATEMENT OF THE PROBLEM

This study is confined to information use pattern of library users of various Arts and Science Colleges that are affiliated to Manonmaniam Sundaranar University, Tirunelveli. The main aim of the study is to measure the success and failure of the library, the reading habits and variety of interest of the users in their field such as general subject and it will serve as guidance to the librarians to process the required documents.

3. OBJECTIVES OF THE STUDY

The following are the specific objectives of the study

- To examine the extent of use of library facilities and services made by the users.
- To asses the usefulness of various sources of information
- To enquire and understand about the utilization of library services
- To asses the user satisfaction of library services
- To asses the extent of dependence of the students and faculty members with the information sources for teaching and research purposes.
- To know the extent of satisfaction of users with the information sources available in various Arts and Science College libraries.

4. PERIOD OF STUDY

The study was undertaken during 2014-15 for a period of one year.

5. SCOPE OF THE STUDY

The study has been under taken in 15 Aided Arts College libraries in the three reveue districts viz, Tirunelveli, Thoothukudi and Kanyakumari which are coming under Manonmaniam Sundaranar University.

6. SOURCES OF INFORMATION

The required information for the study was collected both from Primary and secondary sources. The selected respondents from the users of library formed the Primary source. The records of the library, books, journals magazines, articles appeared in News Papers, unpublished thesis, dissertation and Project Reports formed the secondary source of information.

For the Purpose of detailed study, out of the 62 Arts and science Colleges only 15 Arts and science Colleges at the rate 5 per district was selected as stated below:

7. SAMPLING DESIGN

Table 1 Colleges Selected

Sl.No.	Tirunelveli District	Thoothukudi District	Kanyakumar District
1	St. Jons College	V.O.C.College	S.T.Hindu College
2	M.D.T. Hindu College	APCV College	Nesamani Memorial College
3	Ambai Arts College	Kamaraj College	Women's Christian College
4	Paramakalyani College	G.V.N.College	Arigner Anna College
5	Thiruvalluvar College	Aditanar College	St. Jude's College

Source: Primary Data

All the 15 Colleges selected are of homogenous character imparting education in Arts, Science and Commerce Disiplines and having both UG and PG courses. From each College 16 students have been selected under stratified random sampling method totaling 240 respondents (16x5x3=240). Further, the respondents have been selected on the basis of the subjects they study and teach as detailed below:

Table 2 Detail of Respondents Selected

Subject-wise UG/PG	Tirunelveli District (%)	Thoothukudi District (%)	Kanyakumari District (%)	Total
B.A.,(Humanities)	13(32.5)	13(32.5)	14(35)	40
B.Com.,(Commerce)	13(32.5)	14(35.0)	13(32.5)	40
B.Sc.,(Science)	14(35)	13(32.5)	13(32.5)	40
Total	**40(100)**	**40(100)**	**40(100)**	**120**
M.A.,(Arts Faculty)	13(32.5)	13(32.5)	14(35)	40
M.Sc.,(Science)	13(32.5)	14(35)	13(32.5)	40
M.Com.,(Commerce)	14(35)	13(32.5)	1.3(32.5)	40
Total	**40**	**40**	**40**	**120**
Grand Total of the Sample	**80**	**80**	**80**	**240**

Source: Primary Data

Hence, stratified, random and purposive sampling methods were followed in the selection of Colleges and faculty wise respondents.

8. REVIEW OF LITERATURE

Review of literature is of pivotal importance in any research investigation. An analysis of review of literature enables to identify the areas of research concentration and the magnitude of research out put in specialized branch of any subject. Further, it aims to analyse the past trends, emerging new areas of research, growth of literature. Hence, there is a need to review such significant works and their relevance for the present study:

A few of such past studies are reviewed here under:

- Sobha Rani J. in her un published study on, "Information seeking Behavior of member of Mahila Mandali at Tripathi. Submitted at Sri venketeswara

University for M.L.I.S.,(1996) She used questionnaire method for collection of data.

- Sridhar M.S. made a study on ,"Information seeking behavior of scientists and engineers- Conducted a study on information seeking behavior. A case, study of Indian space Techologists (1995) published by concepts publishing co., New Delhi. He made the study in Bangalore city using the questionnaire method.
- Vital Rao undertoo a study on, "Information seeking behavior of users – A case study of scientists at National Institute of Nutrition". (19-1987) Hyderabad, Published in Lucknow Librarian P5-9. He used questionnaire method.
- Harikrishna Reddy. S. and Karisiddappa C.R. made a survey on "Information seeking behavior of the professionals in the field of disabilities with special reference to mental handicap in India" (44; 1997) Published in the Annals of Library science and Documentaion P.64-69.
- Majudmar, S.made a survey, "Identification of qualitative library services in the Jawaharlal Nehru University system" (1987) published by the Indian Library Association, Delhi P.64-74.
- AL SALEM (Salem Muhammad) made "an Investigation of the relationship between academic role and the information seeking behavior of adult education faculty members" at the university of Wisconsin –Madison for Ph.D., (1989) – unpublished. He used questionnaire method for collection of data from staff and students.

9. HYPOTHESIS SET AND TESTED

Based on the objectives of the study the following hypothesis have been formulated and tested:
There is no significant difference between students and staff members in the

- Frequency of visiting library
- Purposes of visiting library
- Borrowing Books from library
- User statisfaction of the library services.

10. TOOLS USED FOR COLLECTION OF DATA

For the collection of primary data from the selected respondents, three questionnaires were used, one for the students, another one for the faculty members, and the third one was ment for the librarians. All the three questionnaires were fully structured and close ended.

The questionnaires ment for students and staff consisted of 14 questions each and the questionnaire ment for the librarians consisted of 25. In addition informal talk with knowledgeable persons, interview technique with office –bearers of the library and observation technique were also followed for the collection of primary data.

10.1 Tools Used for Analysis and Interpretation

For analysis of the data collected, simple statistical tools such as Averages, percentages tables and diagrammes such as Pie diagram, and Bar diagrams have been used. Null hypotheses were tested for significance at 0.5 degree freedom by applying Chi-square test (x^2) and line charts have also been used.

11. LIMITATIONS OF THE STUDY

Due to constraints of time and cost, only 15 libraries that are government aided institutions (60%) have been studied. There are seven other Autonomous Aided colleges, 28, self financed colleges and two government colleges affiliated to Manonmaniam Sundaranar University have not been considered in this study. The outcome of the study are applicable only to the aided colleges affiliated to Manonmaniam Sundaranar University and the results cannot be generalized.

12. ANALYSIS AND INTERPRETATIONS

Table 1 shows the distribution of respondents faculty-wise in the three Districts visiting library/ using library.

It is evident from table that the respondents from each faculty is equally distributed and there is no any significant difference between faculty in the utilization of libraries.

12.1 Frequency of Visiting Library

The study ha brought to light that 62.5% of the respondents are using library daily, while 23.75 percent of them visit library weekly once, 7.5% visit library occasionally, 3.75% of the respondents go to library once in a fortnight and 2.5% of them visit library monthly once.

The details of the frequency of visit to library by the respondents are exhibited in table 2.

Table 1 Faculty-wise Distribution of Respondents

Faculty	Tirunelveli %	Thoothukudi %	Kanyakumari %	Total
Arts(BA/MA)	26(32.5)	26(32.5)	28(35)	80
Science(B.sc.,/M.Sc.,	27(33.75)	27(33.75)	26(32.5)	80
Commerce(B.Com/ M.Com)	27(33.75)	27(33.75)	26(32.5)	80
Total	**80(100)**	**80(100)**	**80(100)**	**240**

Source: Primary Data

Table 2 Opinion on Frequency of Visit to Library

Sl.No.	Frequency of Visit	No. of Respondents	%
1	Daily	150	62.50
2	Weekly	57	23.75
3	Fortnightly	09	03.75
4	Monthly	06	02.50
5	Occasionally	18	07.50
	Total	**240**	**100.00**

Source: Calculated from Primary Data

It is evident from table 3 that a majority of 75% of the respondents have stated that the librarians are very helpful. About 16.63% of the respondents have stated that the librarians are slightly helpful. Only about 8% of the respondents felt that the library staff were not helpful.

Table 3 Helpfulness of Librarian

Sl. No.	Type of Help	No. of Respondents	%
1	Very much Helpful	60	25
2	Helpful	120	50
3	Slightly Helpful	40	16.67
4	Not helpful	20	08.33
	Total	**240**	**100**

Source: Computed from Primary Data

12. 2 Library Services Utilized

The table clearly indicates that about 80 respondents covering 33.33 percent are mostly using library services for circulation purpose, followed by Reference services (25%) photo copying services (16.67%) inter library services (15%) and Book-issuing services 10%.

Table 4 gives the details of the various services utilized by the respondents.

Table 4 Opinion on Services Utilized

Sl.No.	Section	No. of Respondents	%
1	Book Issue	24	10.00
2	Circulation	80	33.33
3	Reference	60	25.00
4	Inter library loan	36	15.00
5	Photocopying	40	16.67
	Total	**240**	**100.00**

Source: Prepard from Primary Data

The Table 5 show that 25% of the respondents are visiting library for Reading News papers and Journals, while 20% of them fall under preparation of class Notes group and 16.67% of them fall under the group of setting question papers, while 15 percent of them come under guiding scholars, while 13.33% fall under guiding students project work and 10% of them fall under setting assignments for tests.

Table 5 Purpose of Visiting Library by Staff

Sl. No.	Purpose of Visiting Library	No. of Respondents	%
1	For Preparing Notes	12	20.00
2	For Setting Question Papers	10	16.67
3	Setting Assignments	06	10.00
4	Guiding Scholars	09	15.00
5	Guiding Project Works	08	13.33
6	Reading News Papers, Journals	15	25.00
	Total	**60**	**100.00**

Source: Computed from Primary Data

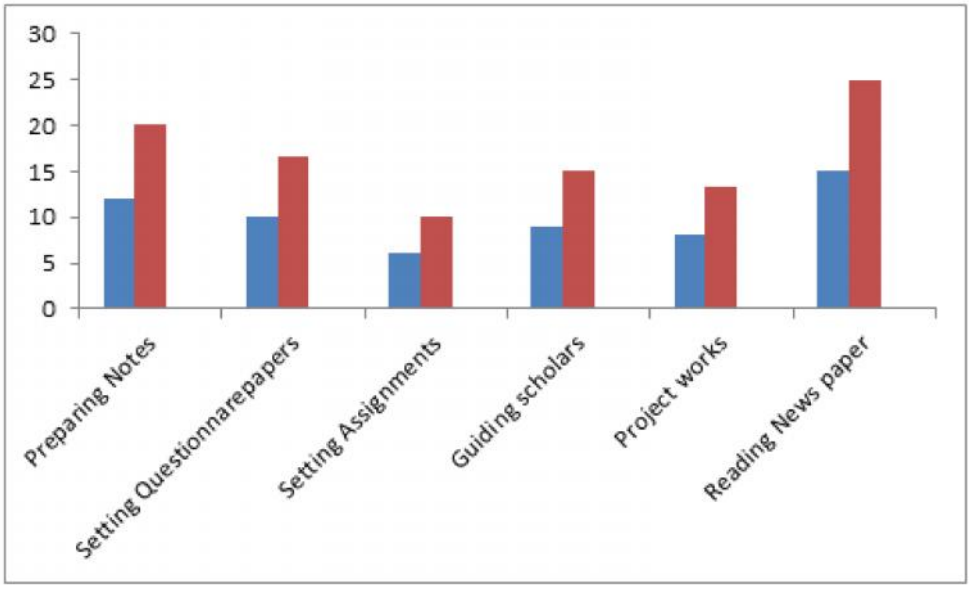

Fig. 1 Shows the quantum distribution of the respondents visiting library

13. FINDINGS

This study deals with the extent of library services, the purpose for which the information is sought and collected, the extent of dependence on various bibliographical sources of information and the extent of satisfaction of information available in the libraries of Aided Arts an science Colleges affiliated to Manonmaniam Sundaranar University. The present research work is aimed to study the information access pattern of teaching staff and students Arts College libraries in the districts of Tirunelveli, Thoothukudi and Kanyakumari. The following are some of the findings of the study.

- Out of the total population of staff and students a sample of 240 respondents were selected. The sample constituted 75% (180) students and 25%(60) staff.
- The analysis reveals that 62.5 percent respondents visit the library "Daily" and 21.7 percent visit the library weekly. So it is inferred that most of the users are in the habit of visiting library regularly.
- The analysis of the purpose of staff visiting library reveals that 25% visit library for reading newspapers and magazines and 20% visiting for preparing notes. About 16.67% go to library for setting question papers 15% visit library for the purpose of guiding research scholars, About 13.33 per cent visit library for the purpose of guiding project work.
- There is no significant difference in the level of borrowing books from the library between teaching staff and students.
- Most of the teaching staff and students (82%) are fully satisfied with the library services. But only 18 percent was not satisfied with library services.
- There is no significant difference between the two group of users. Both students and staff are satisfied with the library services.

14. SUGGESTIONS

The following are some of the suggestions made by the researcher on the basis of the analysis of the data collected and also suggestions received from the users of the libraries.

- It is recommended that library automation should be implemented in all the libraries of Arts and Science Colleges.
- It is also suggested that the internet facility and LAN connections must be made available in all the college libraries.
- It is recommended that audio visual materials such as Audio-Video cassettes and CD – ROM have to be purchased and kept ready in the libraries to satisfy the needy users.
- It is suggested that water cooler and toilet facilities are to be provided in the library which are conspicuously absent in many libraries.

- It is recommended that the list of books and periodicals are to displayed in the notice board periodically. The books and periodicals misplaced by the users should be corrected daily.
- Number of reference sources such as Encyclopaedia, year books, hand books and Directories may be added to libraries.

15. CONCLUSION

The Present study is dealing with the information access pattern of staff and students of Arts and science College libraries of Manonmaniam Sundaranar University, Tirunelveli. It is felt that the studies of this type can be carried out on the users of the public and special libraries also to make valid generalizations. No toilet facilities are available in any of the libraries selected for study. If the suggestions given are implemented it is hoped that the frequency of visit to library and the time they spent in the library may increase.

REFERENCES

[1] A. Abraham and C.R. Karisiddappa, "A Survey of Library Services Rendered to Science Research Scholars by Calicut University Lucknow", Librarian , 1991. pp.90-95.
[2] H.A. Darke, "Managing Innovations in Academic Libraries, College and Research Libraries", Vol. 8, 1993, pp.383-392.
[3] Nancy Fialibram, "User Education in Libraries", London, Clive Bingly, 1984.
[4] A.R. Sethi, "Information Seeking Behavior of Social Scientists Libraries in India", International Library Movement, Vol.12, 1991, pp.1-11.
[5] IC. Witker, "The Basic of Library based User Service", Lucknow, 1997, pp.21.
[6] www. Open access. Com
[7] www. Open source. Com
[8] www. emerald insight.com

Information Literacy Skills of Hostelling Full-Time Female Ph.D Research Scholars of Madurai Kamaraj University, Madurai (TN) : A Study

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Abstract

This paper studied the information literacy skills of hostelling full-time female Ph.D scholars of Madurai Kamaraj University, Madurai, Tamilnadu. A simple random sampling method is used to select 50 respondents and data was collected using a well structured, SCONUL based questionnaire. The findings reveal that: Almost half of female scholars agree that they can identify a lack of knowledge, identify a search topic and use the background information. Nearly half of the respondents agree that they can identify the types of information that will best meet the needs and identify available search tools. Around 40% of the respondents agree that they can access full text information, keep them up-to-date with new information and can find / use online, personal and printed help. 40% of them disagree that they can engage with the community to share information. 44% of them strongly agree that they can read and download online material and data. half of the respondents agree that they can distinguish difference information sources and read critically. One-third of them strongly agree that they can assess the quality and credibility of information found. Around 40-46% of the respondents disagree that they use bibliographical softwares like zotero, mendeley to manage information, they cite sources using specific reference styles and know the implications of plagiarism. 42% of them strongly agree that they can summarize documents and reports verbally and in writing. 54% of them agree that they can synthesize and appraise new and complex information from different sources. 100% need information literacy programmes and 100% vote for the introduction of Information Literacy as a paper in University Courses.

Keywords: *Evaluation, Information literacy, Research Scholars, SCONUL 7 pillars, Synthesis*

1. INTRODUCTION

Literacy is a simple process of acquiring basic cognitive skills. Information Literacy is the set of skills and knowledge needed to be able to access technological resources and assess their accuracy, reliability, and credibility. Information Literacy is focused on content, analysis, searching and evaluation of information. Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (American Library Association, 1989).

2. SCONUL 7 PILLARS MODEL OF INFORMATION LITERACY

The "seven pillars" model was developed by SCONUL,(2006). It comprises of 7 IL Skills: Identify, Scope, Plan, Gather, Evaluate, Manage and Present.

3. LITERATURE REVIEW

Issar, Amusan, Olarongbe, Igwe and Oguntayo (2015) performed a survey on the IL competence of 1205 final year undergraduate student at the University of Ilorin, Nigeria using a questionnaire and found that majority of the respondents had information needs on their academic engagements; Many considered difficulty in identifying their needs, cost of Internet browsing, subscription requirement, as challenges. It is recommended that the University authorities should consider the teaching of IL as a course to fresh students.

Kanfade (2014) conducted a study at Sant Gadge Baba Amravati University to know the entry level computer literacy and information literacy of the post-graduate students using questionnaires ad found that the majority of the respondents lack awareness regarding directories, encyclopaedias, subject journals etc. Nearly two-thirds of the total respondents are not able to use

the Internet. It is suggested that University take steps to impart computer literacy and information literacy programmers to the students.

Al-Aufi and Al-Azri (2013) surveyed the current status of information literacy among 550 undergraduate students at Sultan Qaboos University using the Big6 model with a questionnaire. The results indicated high rates of information literacy skills. Among the Big6 skills synthesis was ranked first, while the skill of location and access scored the lowest. Significant statistical differences attributed to specialization, gender, English fluency, and computer skills were indicated at minor levels.

Lata and Sharma (2013) studied about the IL skills of the faculty and students of Postgraduate Institute of Medical Education and Research, Chandigarh and Pt. B.D. Sharma University of Health Science, Rohtak using questionnaires. The findings are : All the respondents were able to specify their information needs. A majority of the faculty and students rated their skills high in accessing information in print and electronic format. For evaluating information in print format most of the respondents rated their skills very high whereas in electronic format most of them rated their average skills. Kaur, Sarman and Rani (2012) explored the status of information literacy skills of students of Guru Nanak Dev University, Amritsar, their information seeking strategies using a questionnaire and personal interviews and found that a majority of the respondents possess knowledge of MS-office, social networking sites and e-mail. Among six types of internet searching tools, search engines and wiki are the most common, while blogs, online bibliographic databases and subject gateways/portals are less frequent.

Hassan and Nikam (2012) conducted a study on attitudes of 150 faculty members and research scholars (34% were female) towards information literacy in Bangalore University. The result also revealed that the total mean score of respondents about attitudes towards a) 'information literacy' is 235.97 out of 336; b) 'nature and extent of information needed' is 39.12 out of 56; c) 'access to information' is 61.76 out of 88; d) 'evaluation of information' is 70.52 out of 100; e) 'information use' is 28.69 out of 40 and f) 'economic, legal, and social issues of information use' is 35.87 out of 52.

Biradar and Swapna (2011) conducted a research study on Information Literacy Competency of Bioscience students of Kuvempu University and found that 87.75 percent of the students were able to know the need of information on a topic and consulted library staff for locating the information. 62.59 percent of the students were able enough to select different information finding tools to search information. 59.86 percent of the students were able to select suitable search terms and construct effective searches. 53.47 percent of the students had the capability to evaluate the Internet resources by using all important criteria such as reliability, validity, authority, accuracy, timeliness, etc.

Sasikala and Dhanraju (2011) assessed the Information Literacy Skills among Science Students of Andhra University and found that a high percentage (94.33) of the students preferred to use books frequently whereas 43.97 % and 42.55 % reference books and newspapers respectively. 22 % of the students were aware of the importance of encyclopaedia as the best source for the basic information on a topic. Only 14 % of the students were aware of the use of bibliography. Simple keyword search was used by a majority of students i.e. 54.60 % for searching and retrieving information from a database while 20.61 % of the students used field search (title, URL etc.) technique. The internet was used by 89.36 5 of the students. A majority of students i.e. 57.44 % were using different websites on the web and 20.56 % using Internet for accessing databases.

Sevukan and Brahma (2011) examined the literacy level of PG Students and Research Scholars of Pondicherry University in the use of digital resources and found that 60.47 percent of the students and 14.73 percent of the research scholars were aware of the digital resources. E-journals, e-books and e-newspapers were mostly used by 18.60 percent, 9.30 percent and 6.98 percent of the research scholars respectively. 19.38 percent of the students frequently used the e-books whereas 18.60 percent of the scholars frequently used the e-theses.

4. RESEARCH METHODOLOGY

It is a descriptive cum-evaluative study. A simple random sampling method is used to draw 50 female Ph.D scholars with a condition that they are all full-time scholars and they all stay in the university hostels.

5. INSTRUMENTS FOR DATA COLLECTION

A well structured questionnaire was designed to collect required data from the selected 50 respondents.

The questions for IL Competency Assessment were taken from 'seven pillar model' enunciated by SCONUL with little modification and simplification made by the researchers. The data was collected during the month of April 2016.

6. OBJECTIVES OF THE STUDY

- To measure the information literacy competencies of female research scholars in
- Identifying the need for information
- Assessing the current knowledge and identifying gaps
- Constructing strategies for locating information
- Locating and accessing information needed
- Reviewing, comparing and evaluating information
- Organizing information professionally and ethically
- Applying, presenting, synthesizing and disseminating information
- To get respondents' views on introducing IL as a paper in university courses.

7. DATA ANALYSIS AND INTERPRETATION

7.1 Department-wise Distribution of Respondents

Table 1 shows that 59.6% (28) of the respondents are from Science department and 56.7% (17) of them are from language departments. The least of 5 respondents are from social science departments.

Table 1 Department-wise Distribution of Respondents

Department			Total
Science	Social Science	Language	
28	5	17	50
59.6%	21.7%	56.7%	50.0%

7.2 IL Pillar 1 : Identify

Table 2 shows that almost half of female scholars agree that they can identify a lack of knowledge, identify a search topic and use the background information. Around 1/4th of them disagree that they can identify a lack of knowledge and can use the background information.

7.3 IL Pillar 2 : Assess

Table 3 shows that nearly half of the respondents agree that they can identify the types of information that will best meet the needs and identify available search tools. Only 14 of them disagree that they can identify different formats.

7.4 IL Pillar 3 : Plan

Table 4 shows that only least number of respondents (say 5 to 14) disagree with all the three skills. 22 and 28 respondents agree with first skill and third skill while only 17 of them agree with the second skill.

7.5 IL Pillar 4 : Gather

Table 5 shows around 40% of the respondents agree that they can access full text information, keep them up-to-date with new information and can find / use online, personal and printed help. 40% of them disagree that they can engage with the community to share information. 44% of them strongly agree that they can read and download online material and data.

7.6 IL Pillar 5 : Evaluate

Table 6 discloses that half of the respondents agree that they can distinguish difference information sources and read critically. One-third of them strongly agree that they can assess the quality and credibility of information found.

7.7 IL Pillar 6 : Manage

Table 7 shows that around 40-46% of the respondents disagree that they use bibliographical softwares like zotero, mendeley to manage information, they cite sources using specific reference styles and know the implications of plagiarism. But around 72 % of the respondents are quite familiar with statistical softwares like SPSS and Excel.

7.8 IL Pillar 7 : Present

Table 8 shows that 30% of the respondents disagree and 42% of them strongly agree that they can summarize documents and reports verbally and in writing. 54% of them agree that they can synthesize and appraise new and complex information from different sources.

7.9 Information Literacy Programme and Course

Table 9 shows that all the respondents, 100% need information literacy programmes and 100% vote for the introduction of Information Literacy as a paper in University Courses.

Table 2 IL Skill Set – IDENDIFY

IL Skill Set – IDENDIFY	Level	Count	%
I can identify a lack of knowledge in my subject area	Disagree	12	24.0%
	Agree	23	46.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%
I can identify a search topic / question & define it using simple terms	Disagree	6	12.0%
	Agree	31	62.0%
	Strongly Agree	13	26.0%
	Total	50	100.0%
I can use the background information to underpin the search	Disagree	11	22.0%
	Agree	24	48.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%

Table 3 IL Skill Set – ASSESS

IL Skills	Level	Count	%
I can identify which types of information will best meet the need	Disagree	6	12.0%
	Agree	24	48.0%
	Strongly Agree	20	40.0%
	Total	50	100.0%
I can Identify the available search tools	Disagree	5	10.0%
	Agree	29	58.0%
	Strongly Agree	16	32.0%
	Total	50	100.0%
I can identify different formats in which information may be provided	Disagree	14	28.0%
	Agree	18	36.0%
	Strongly Agree	18	36.0%
	Total	50	100.0%

Table 4 : IL Skill Set – PLAN

IL Skills	Level	Female	
		Count	%
I can define a search strategy by using appropriate keywords and defining and setting limits	Disagree	5	10.0%
	Agree	22	44.0%
	Strongly Agree	23	46.0%
	Total	50	100.0%
I can select the most appropriate search tools	Disagree	8	16.0%
	Agree	28	56.0%
	Strongly Agree	14	28.0%
	Total	50	100.0%
I can identify controlled vocabularies to aid in searching if appropriate	Disagree	14	28.0%
	Agree	17	34.0%
	Strongly Agree	19	38.0%
	Total	50	100.0%

Table 5 : IL Skill Set – GATHER

IL Skills	Level	Female	
		Count	%
I can access full text information (both print and digital)	Disagree	15	30.0%
	Agree	21	42.0%
	Strongly Agree	14	28.0%
	Total	50	100.0%
I can read and download online material & data	Disagree	10	20.0%
	Agree	18	36.0%
	Strongly Agree	22	44.0%
	Total	50	100.0%
I can keep up- to- date with new information	Disagree	15	30.0%
	Agree	22	44.0%
	Strongly Agree	13	26.0%
	Total	50	100.0%
I can engage with the community to share information	Disagree	20	40.0%
	Agree	15	30.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%
I can find /use online, personal and printed help	Disagree	10	20.0%
	Agree	25	50.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%

Table 6 : IL Skill Set – EVALUATE

IL Skills	Level	Female	
		Count	%
I can distinguish between different information resources	Disagree	7	14.0%
	Agree	25	50.0%
	Strongly Agree	18	36.0%
	Total	50	100.0%
I can assess the quality, accuracy, relevance and credibility of the information resources	Disagree	14	28.0%
	Agree	18	36.0%
	Strongly Agree	18	36.0%
	Total	50	100.0%
I can read critically, identifying key points and arguments	Disagree	15	30.0%
	Agree	20	40.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%

Table 7 : IL Skill Set – MANAGE

IL Skills	Level	Female	
		Count	%
I can use bibliographical software (Zotero, Mendely etc) to manage information	Disagree	21	42.0%
	Agree	16	32.0%
	Strongly Agree	13	26.0%
	Total	50	100.0%
I can cite sources using referencing styles like APA, MLA, Chicago etc.	Disagree	20	40.0%
	Agree	19	38.0%
	Strongly Agree	11	22.0%
	Total	50	100.0%
I know what is plagiarism and its implications	Disagree	23	46.0%
	Agree	14	28.0%
	Strongly Agree	13	26.0%
	Total	50	100.0%
I can use appropriate statistical software to manage data (like SPSS, Excel, PSPP, SOFA Stat etc.)	Disagree	14	28.0%
	Agree	21	42.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%

Table 8 : IL Skill Set – PRESENT

IL Skills	Level	Female	
		No.	%
I can summarize documents and reports verbally and in writing	Disagree	15	30.0%
	Agree	14	28.0%
	Strongly Agree	21	42.0%
	Total	50	100.0%
I can analyze and present data appropriately	Disagree	11	22.0%
	Agree	24	48.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%
I can synthesize and appraise new and complex information from different sources	Disagree	13	26.0%
	Agree	27	54.0%
	Strongly Agree	10	20.0%
	Total	50	100.0%
I can select appropriate publications outlets in which to publish	Disagree	13	26.0%
	Agree	22	44.0%
	Strongly Agree	15	30.0%
	Total	50	100.0%

Table 9 : Need for IL Programme and IL Course

Information	Information	Total
Yes	Yes	
50	50	50
100%	100%	100%

8. SUGGESTIONS

- Frequent workshops, seminars, conferences and webinars may be conducted by university departments to educate their scholars on various information skills.
- The university library may conduct user orientation programmes for the scholars in periodical interviews.
- The lacuna in the information literacy skills of the full-time Ph.D scholars may be made alright with sufficient IL programmes.
- Special hands-on workshops may be organized on the use of free and open sources bibliographical softwares like Zotero and Mendeley.
- Exclusive interactive sessions may be organized with the help of external experts on the serious issues related to plagiarism.
- The university library should conduct some special programmes on the necessity of using referencing styles like APA, MLA and Chicago.
- The university should introduce IL as a paper (with sufficient credits) in all the PG Courses.

9. CONCLUSION

The scholars should develop their information literacy skills to survive and succeed in this information proliferated, information polluted and information heaped society. The ability to identify, locate, access, evaluate, use and acknowledge variety of information sources – both print and digital- play the major role in the research works of any scholar. The information literate scholars will be able to bring out creative, innovative, useful and productive output beneficial to the society. So, the university and faculty members of all the departments should take all the necessary steps to create and maintain an information literate campus throughout.

REFERENCES

[1] A. Al-Aufi and H Al-Azri, "Information Literacy in Oman's Higher Education: A Descriptive-Inferential Approach", Journal of Librarianship and Information Science, Vol.45, No.4, 2013, pp.335-46.

[2] American Library Association, "Presidential Committee on Information Literacy - Final Report." Chicago: American Library Association, 1989.

[3] Hassan, Moghaddaszadeh, and N. D. Nikam Khaiser, "Attitudes of Faculty Members and Research Scholars towards Information Literacy: A Study of Bangalore University, Bangalore, India", International Journal of Information Dissemination and Technology, Vol.2, No.1, 2011, pp.12-17.

[4] A O. Issar, B.B. Amusan, S.A.Olarongbe, K.N. Igwe and S.AOguntayo, "An Assessment of the Information Literacy Competence of Undergraduate Students at the University of Ilorin, Kwara State, Nigeria." Annals of Library and Information Studies, Vol.62, 2015, pp.68-76.

[5] Kanfade, S A. 2014. "Information Literacy Assessment Programme in Sant Gadge Baba Amravati University, [7] Amravati: Pre & Post Test Analysis." International Journal of Digital Library 4 (2): 172–81.

[6] Kaur, A, Sarman, and S Rani. 2012. "Information Literacy among the Students in the Electronic Environment: A Case Study of Guru Nanak Dev University, Amritsar." SRELS Journal of Information Management 49 (1): 21–38.

[7] Lata, R S, and S Sharma. 2013. "Information Literacy among Faculty and Students of Postgraduate Institute of Medical Education and Research, Chandigarh and Pt. B. D. Sharma University of Health Sciences." International Journal of Information Dissemination and Technology 3 (4): 244–48.

[8] Sasikala, C, and V Dhanraju. 2010. "Assessment of Information Literacy Skills among the Science Students of Andhra University: A Survey." Library Philosophy and Practice Paper-824 (e-journal).

[9] SCONUL Working Group on Information Literacy. 2011. "The SCONUL Seven Pillars of Information Literacy/ : Core Model for Higher Education." SCONUL. http://www.sconul.ac.uk/groups/information_literacy/seven_pillars.html.

[10] Sevukan, R, and S K Brahma. 2011. "Digital Information Literacy among PG Students and Research Scholars of Pondicherry University: A Study." In User Empowerment through Digital Technologies, 195–204.

Evaluation of World Vernalization Research Trends: A Bibliometric Perspective

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Abstract

The main objective of this study is to access worldwide research activity in Vernalization using bibliometric indicators. Studying research productivity is a critical task that is important for understanding how science evolves and pivotal for government and higher education institutions. Bibliometric analysis of research outputs is important in universities and government agencies for research evaluation as it provides critical inputs for policy makers.The data was downloaded from Web of Science for documents pertaining to vernalization. Data obtained were then exported to Histcite for analysis. The present data revealed that there is a worldwide increasing interest in vernalizationresearch. The current study aimed to quantitatively analyse and compare the research publications productivity in vernalizationduring the year 1998 to 2016. The highest number of publications published in the year of 2016 with167 records followed by 2014 with 144 records. Overall, 5319authors contributed in347 journals with 1818 records of the publications from 1245 number of institutions that were located in 70 numbers of countries in 13 languages.Willingness of Agriculture policy makers to make vernalization accessible to the public will determine the future of vernalization research activity and future.

Keywords: *Vernalization, Bibliometrics, Web of Science, research, literature*

1. INTRODUCTION

Vernalization is a process by which plant flowering is promoted by prolonged exposure to the cold of a typical winter. Vernalization evolved in certain plants to ensure that flowering occurred at the proper time of year. In some plants, the requirement for extended exposure to cold is absolute; that is, they will not flower until the proper duration of cold exposure has been perceived.

Bibliometrics is the statistical analysis of bibliographic data, commonly focusing on citation analysis of research outputs and publications, i.e. how many times research outputs and publications are being cited. Bibliometric analysis is becoming an increasingly important way to measure and assess research impact of individuals, groups of individuals or institutions. Bibliometric methods or "analysis" are now firmly established as scientific specialties and are an integral part of research evaluation methodology especially within the scientific and applied fields. The methods are used increasingly when studying various aspects of science and also in the way institutions and universities are ranked worldwide. Nowadays, a number of tools have apparently made it much easier to produce these reports. This ranges from databases such as Web of Science (WoS), Scopus or Google Scholar (Li et al. 2010) which have added, incorporated reference handling capabilities.

2. REVIEW OF LITERATURE

Gian Singh, Moin Ahmad and Mohammad Nazim (2008) undertook a bibliometric analysis of scientific output of the plant Embeliaribes collecting a total of 332 articles from the Pub Med, The searches were restricted to published articles and contain the terms Embeliaribes and Vidanga. The various analyses focus on growth of literature, authorship pattern, most prolific authors, core journals of the subject, most productive institutes and countries. Thirumagal (2012) studied the research performance in stem cell research covering a period of 10 years from 1999 to 2008 with a total of 54,373 publications drawn from MEDLINE database. The study revealed that USA ranked atop the list with a maximum number of contributions followed by United Kingdom and Netherlands as second and third positions respectively. Moreover, it was found that 88.52% of total output was published in English language, followed by Chinese 2.86% and Japanese 0.94%. There was a decrease in Relative Growth Rate.

3. OBJECTIVES OF THE STUDY

Regarding the analysis of Vernalization at the global level withspecific focus on the authors and institutions, the objectives of this studyinclude

- To identify the year wise growth of publications.
- To assess the author wise contributed paper.
- To study the document type of the publications.
- To study the language wise distributions of the publications.
- To identify the country wise distribution of the publications.
- To identify the Research literature output performance of Institutions

4. METHODOLOGY

The data required for the bibliometric study of the vernalization research literature output were retrieved from the Web of Science for the period of nineteen years spanned between 1998 and 2016 using the subject heading Vernalization tagged with the required individual year numbers. Selective statistical principles have been applied other than bibliometric identification of prolific authors and institutions and core journals.

5. ANALYSIS

5.1 Year-wise Distribution of Publications

In table-1shows that year-wise distributions of publications during the period of 1998-2016. A total of 1818 records were published. The highest number of publications published in the year of 2016 with167 records followed by 2014 with 144 records. The least number of publications published in the year 1999 with 42 records.

Table 1 Year-wise Distribution of Publications

Sl.No.	Year	Records	Percentage	TLCS	TGCS
1	1998	48	2.64	646	2216
2	1999	42	2.31	1093	2765
3	2000	49	2.70	963	3213
4	2001	54	2.97	1138	2634
5	2002	73	4.02	999	3147
6	2003	73	4.02	1892	5095
7	2004	86	4.73	2120	5857
8	2005	81	4.46	1466	5055
9	2006	95	5.23	1653	5246
10	2007	112	6.16	1492	6613
11	2008	103	5.67	823	4104
12	2009	110	6.05	1266	4428
13	2010	98	5.39	577	2835
14	2011	129	7.10	571	3622
15	2012	117	6.44	386	2652
16	2013	123	6.77	324	2261
17	2014	144	7.92	207	1685
18	2015	114	6.27	66	667
19	2016	167	9.19	27	345
Total		**1818**	**100**		

5.2 Ranking of Authors Based on Publications

Table 2 shows that authors by number of publications.Authors Amasino RM and Dean C has published highest number of articles for the study period with 57 records followed by Dennis ES and Dubcovsky J with 44 records.

Table 2 Ranking of Authors Based on Publications

Author	Records	TLCS	TGCS
Amasino RM	57	2710	6284
Dean C	57	2035	6313
Dennis ES	44	2134	4066
Dubcovsky J	44	2253	4693
Peacock WJ	33	2005	3707
Trevaskis B	27	832	1433
Michaels SD	24	1409	3222
Finnegan EJ	23	603	1412
Fowler DB	23	589	1051
Kato K	23	415	837

5.3 Institutions-wise Distribution of Publications

Table 3 shows that Institution wise distribution of publications and selected only top 15. The study found that major portion of the research productivity covered by University Wisconsin. The Chinese Academy Science has ranked second with 60 records (3.30%), next University California Davis 53 records (2.92%) as third position.

5.4 Language-wise Distributions of Publications

Table 4 shows language-wise distribution of publications. Language English stands first with 1780 records followed by Portuguese with 13 records.

Table 3 Institution-wise Distribution of Publications

Institution	Records	%	TLCS	TGCS
University Wisconsin	80	4.40	3393	8503
Chinese Academic Science	60	3.30	148	1075
University California	53	2.92	2251	4808
John Innes Ctr Plant Sci Res	48	2.64	1978	5728
Hungarian AcadSci	47	2.59	795	1881
John Innes Ctr	44	2.42	721	2939
CSIRO	41	2.26	1694	3358
Oregon State Univ	38	2.09	586	1428
Seoul Natl Univ	37	2.04	621	2294
Univ Saskatchewan	37	2.04	639	1281
USDA ARS	37	2.04	410	1703
Chinese AcadAgrSci	29	1.60	70	415
Russian AcadSci	29	1.60	76	174
Univ Minnesota	29	1.60	102	1133
Michigan State Univ	28	1.54	189	665

Table 4 Language Distribution of Publications

Language	Recs	TLCS	TGCS
English	1780	17695	64379
Portuguese	13	6	36
Japanese	5	2	4
Chinese	4	5	10
Russian	3	0	0
Spanish	3	0	0
French	2	0	1
Hungarian	2	0	5
Korean	2	0	1
Czech	1	0	0
German	1	1	3
Polish	1	0	1
Ukrainian	1	0	0

5.5 Document-wise Distribution of Publications

Table 5 shows that the Vernalization research productions have been contributed in eight forms of documents such as Article, Review, Proceedings Paper, Meeting Abstract, Editorial Material, Book Chapter, Correction, and Retracted Publication. The highest number of publications covered by Article with 1593 records (87.62%) followed by Review with 135 records (7.43%) and remaining forms are listed in the below table.

5.6 Country-wise Distribution Publications

Table 6 shows that the country wise distribution of articles contributed by authors from USA with 532 (29.26%) records, Peoples R China with 250(13.75%),

UK with 197(10.84%) records and remaining countries are listed in the table below. India stands in twenty sixth place with 22 records.

Table 6 Country-wise Distribution of Publications

Country	Records	%	TLCS	TGCS
USA	532	29.26	8340	27975
Peoples R China	250	13.75	477	3246
UK	197	10.84	3241	12689
Australia	162	8.91	2588	6601
Japan	144	7.92	1360	4537
Germany	123	6.77	744	5873
Canada	107	5.89	933	2795
South Korea	75	4.13	822	3255
France	66	3.63	685	2720
Spain	62	3.41	452	2518

7. FINDINGS AND CONCULSIONS

The present study is Bibliometric Analysis of scholarly articles of vernalization published in the journals indexed by Web of Science. The result of this study, reveals that total number of publications during year1998-2016.A sum of total of1818 articles spanning from 1998 to 2016 covering a period of 19calendar years were obtained, organised, sorted out by choosen specific field in records and analysed.The publication is divided by the two categories. It is clearly shows that during the period 1998-2016 a total of1818 publications were published at global level. The highest number of publication is 167 papers in 2016 and followed by 144 papers in 2014.The least number of publications published in the year 1999 with 42 records.

8. CONCLUSION

Vernalizationattracts a lot of attention in plant science and is a rapidly developing field of research. In this paper, we conduct a Bibliometric analysis and systematically investigate the development and current state of Vernalizationpublications provided by Web of Science. The key words ‘‘Vernalization’’ was used to search in the WoS database in the range of years 1998-2016.

The present study could review that there are 1818 numbers of publications indexed by web of science databases under Vernalization.The highest number of publications published in the year of 2016 with167 records followed by 2014 with 144 records. Overall, 5319 authors contributed in 347 journals with 1818 records of the publications from 1245 number of institutions that were located in 70 numbers of countries in 13 languages.We hope that this study, based on current academic publications will provide a roadmap and support the future direction of research in this area.

REFERENCES

[1] R. Bastow, JS.Mylne, C. Lister, *et al*. “Vernalization Requires Epigenetic Silencing of FLC by Histone Methylation”, Nature, Vol.427, 2004, pp.164-167.

[2] J. Li , JF. Burnham, T.Lemley, RM.Britton, “Citation Analysis: Comparison of Web of Science”, Scopus, SciFinder, and Google Scholar, Journal of Electronic Resources in Medical Libraries, doi: 10.1080/15424065.2010.505518, Vol.7, No.3, 2010, pp.196–217.

[3] Gian Singh, Moin Ahmad, Mohammad Nazim, “A Bibliometric Study of Embelia”, Ribes, Library Review, Vol.57, No.4, 2008, pp.289-297.

[4] A. Thirumagal, “Stem Cell Research: A Bibliometric Analysis from 1999-2008”, Library Philosophy and Practice. (ejournal) paper 791, 2012.

[5] https://www.accessscience.com/content/vernalization/730500 retrieved on 12 Sep 2107.

Mobile Reading Habits of the Students of Navarasam Arts and Science College for Women, Erode: A Study

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Abstract

This study examines the reading habits through mobile technology by the students of Navarasam Arts and Science College for women, Erode. The required data was collected from 200 students with the help of a well structured questionnaire. The results showed that majority of 173 students (86.5%) are using smart phones and these students are using WhatsApp and Internet. The study reveals that 145 students (72.5%) are reading books through mobile phones daily.

Keywords: *Internet, Mobile Phones, Mobile Apps, Online reading, Reading habits*

1. INTRODUCTION

Reading is one of the main tool for lifelong learning. Mobile reading is an most important activity in the society for easy to survive in life. Due to technological developments, reading habits are changing lots. In our society, the younger's spending more time for using mobile phones. It is important to update the acquire knowledge and information. Even the information may appear in different media, the point is people still need to read. The Internet is the right instrument to explore the maximum extent of staff for research and learning across the world. A UNESCO study released to says that hundreds in thousands of people in developing countries are using their mobile phones for reading. The report found a revolution in the reading habits of the developing countries, where books can be scares but cell phones are not. One may assume that now a days the students are read less and they interested to use some social medias like face book, WhatsApp and playing some games on online in their spare time.

2. OBJECTIVES

The following are the objectives of the study:

- To analyze the type of mobile phones by the students for reading purpose.
- To determine the factors influenced for reading habits through mobile phones.
- To identify the kind of mobile applications are used by students.
- To know the time spent for online reading.
- To identify the difficulties faced by the students.
- To analyze the satisfaction of reading culture with the usage of mobile phones.

3. REVIEW OF LITERATURE

Technological development changes the reading behavior of an individual. Mobile phone use in educational context can be used to facilitate learning. This is because learning is gradually shifting from focusing on memorizing data for the purpose of passing examination, to conducing and analyzing research using the internet. The habit of reading is decreasing day-by-day especially amongst students. Students are lagging behind in reading. They spend more hours an electronic media. Originally the mobile phone served as a tool for business management. Now, mobile phones serve as a tool for social connection. Mobile communication is being used for many purposes, from instant – micro blogging (Twitter), Social networking sites (Facebook, Myspace), email to basic voice mail.

Kukulska- Hulme and Traxler (2007) revealed how cell phones facilitate designs for authentic learning to personalized learning that largely targets real world problems and involves projects off relevance and interest to the learner. Cell phone use has also been found to support lifelong learning that occurs during everyday life. Kahari (2013) examines the effects of cell phone on the study habits of first year students of Faculty of Arts, University of Zimbabwe. The research was carried out using questionnaire distributed to 200 students who own cell phones. The results showed significant gender

differences in several aspects of cell phone use. The results also revealed that cell phone use has negative and positive effects on the study habits of university students depending on usage patterns. A survey conducted by Oyewusi et al. (2014) showed that students were not favorably disposed to reading at home and that some of them were found to read by their parents. The study further revealed that almost all the respondents owned a mobile phone. The researchers recommended that software applications and teaching materials be harnessed for use on mobile phone such that Nigerian students would be able to read and learn using this equipment.

4. METHODOLOGY

Questionnaire is the tool used for collecting the information from the students. The copies of questionnaire were distributed to 230 students. A total of 200 filled in questionnaires were received back. Overall response rate was 86.95%. The collected data was analyzed using percentages.

5. STATEMENT OF THE PROBLEM

Reading is very important to human beings to acquire knowledge and information. We cannot survive in this competitive world without updating our knowledge. Now-a-days the habit of reading form only changed due to ICT developments. In this study has made to find out the factors which are influence the reading habits through mobile phone.

6. DATA ANALYSIS

The collected data was analyzed under various headings and the results are discussed in the following paragraphs.

6.1 Types of Mobile Phone Used

A questionnaire has been given to the respondents for the purpose in what kind of mobile they are using. The analysis of their responses to shows that the majority of the respondents (89.44%) are using smart phones.

6.2 Frequency of Reading Books

The responses according to the frequency of reading books through mobile phones are in Table1.

It is evident from the above Table that the level of enhancing the knowledge in using mobile phone for reading by the respondents who read daily ranged between 56 and 90 with a mean of 72.18%. The level of enhancing knowledge perceived by the respondents who read once in a week ranged between 46 and 94 with a mean 73%. On the other hand, the level of enhancing knowledge perceived on reading through mobile phone by the respondents who read twice a week ranged between 46 and 95 with a mean of 78.12%. From the analysis, it is inferred that respondents who read through mobile phone twice a week have perceived maximum level of enhancing knowledge.

It could be observed from the above table that the calculation chi-square value is greater than the table value and the result in significant at 1% level. Hence, the hypothesis “Frequency of reading through mobile phone and enhancing their knowledge are associated” holds good. From the analysis it in inferred that there is a close relationship between the frequency of the reading books through mobile phone and level of their knowledge enhancement.

In order to find the relationship between the frequency of using mobile phone for reading by the respondents and the level of enhancing knowledge, a chi-square test was used an the result of the test to shown in the table 2.

Table 1 Frequency of Visit and Level of Enhancing the Knowledge

Sl.No	Frequency of Visit	No	Percentage	Mean	Range		SD
					Min	Max	
1	Daily	72	36	72.18	56	90	6.62
2	Once a Week	68	34	73.00	46	94	12.05
3	Twice a Week	60	30	78.12	46	95	11.97
	Total	200	100	74.17	46	95	10.65

Table 2 Frequency of Reading Through Mobile Phone and Level of Enhancing Knowledge (chi-square test)

Factor	Calculation of chi-square Value	Table Value	DF	Remark
Frequency of Reading Through Mobile	103.245	13.28	4	Significant at 1% level

6.3 Time Spent with Mobile Phones

Table 3 reveals that a more than half of the students (41%) are using mobile phones for 3 hours in a day, 19.5% are using mobile phones for 2 hours in a day, 17.5% are using mobile phones for 1 hour, 11.5% are using mobile phones for more than 3 hours, and the remaining 10.5% are using mobile phones less than 1 hour per day.

The responses of the students according to the time spent by them while using mobile phone are in Table 3.

Table 3 Time Spent by Students Using Mobile Phone and Level of Knowledge Enhancing

Time Spent	Respondents	%
Below 1 hour	21	10.5
1hour	35	17.5
2 hour	39	19.5
3 hour	82	41
More than 3 hours	23	11.5
Total	**200**	**100**

6.4 Time spent for Online Reading

Figure 1 shows that majority of the respondents (42.5%) spent about 1 hour for online reading through mobile phones per day, 22.5% are using below 1 hour,19% are using 2 hours,11.5% are using 3 hours and 4.5% are using for more than 3 hours. It can be concluded that majority of the respondents spent 1 hour on online reading per day. The responses according to the time spent on online reading are shown figure1.

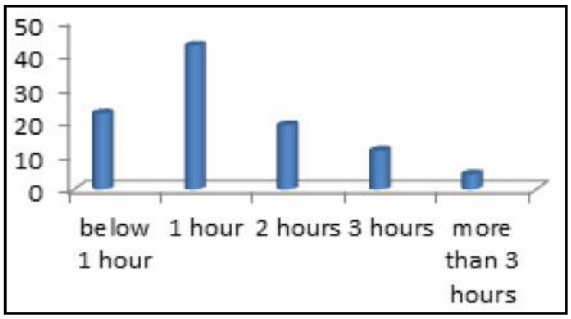

Figure 1 Time spent on online reading per day

6.5 Types of Mobile Application are Used

Table 4 shows that a high percentage of the respondents (34%) are using WhatsApp, 21.5% Google, 15.5% Facebook, 9.5% You Tube, 5.5% Twitter, 5% Way2sms,3% Skype, 2.5% Messanger, 2 % LinkedIn, 1.5% Hike application through the mobile phones. Hence, it can be concluded that a high percentage of the respondents are using WhatsApp through mobile phones.

The responses according to the kind of Applications are used through mobile phones are shown in Table 4.

Table 4 Types of Applications are Used Through Mobile Phones and Level of Knowledge Enhancing

Types of Applications	Respondents	%
Google	43	21.5
Face book	31	15.5
Whatsapp	68	34
Hike	03	1.5
YouTube	19	9.5
Skype	06	3
Twitter	11	5.5
Messenger	05	2.5
Way2sms	10	5
LinkedIn	04	2
Total	**200**	**100**

4.6 Purpose of Using Mobile Phones

Majority of the indicates that a high percentage of the respondents (42%) are using mobile phones for Communication, 15.5% are using for Social Networking, 9% are using for Education, 8% are using for Internet Search, 7% are using for Games, 6.5% are using for Camera, 4.5% are using for Music and News the remaining 3% are using for Shopping.

The responses according to their purpose of using mobile phones are shown in Table 5.

Table 5 Purpose of Using Mobile Phones

Purpose	Respondents	%
Communication	84	42
Social Networking	31	15.5
Education	18	9
Games	14	7
Music	09	4.5
Camera	13	6.5
News	09	4.5
Shopping	06	3
Internet Search	16	8
Total	**200**	**100**

4.7. Problems Faced in Mobile Reading

It could be seen from the above Table 6 that the Slow Downloading was ranked first with the score of 18984 Garrett Points. Virus Problem was the second reason with a score of 18851 Garrett Points. Mobile Hanging was ranked third with a score of 18788. The respondent has given fourth rank to Low Battery with a score of 18786. Small Screen Size was ranked in the fifth position with a score of 18643. Inadequate memory was ranked sixth position and Too much Expensive was ranked seventh position with a score of 18582 and 18547 Garrett Points respectively.

The responses according to the user problems while reading books through mobile phones.

Table 6 Problems Faced While Reading on Mobiles

Sl. No.	Problems Faced while Reading on Mobiles	Total Score	Mean Score	Rank
1	Slow Downloading	18984	94.92	I
2	Virus Problem	18851	94.26	II
3	Mobile Hanging	18788	93.94	III
4	Low Battery	18786	93.93	IV
5	Small Screen Size	18643	93.21	V
6	Inadequate Memory	18582	92.91	VI
7	High Cost	18547	92.73	VII

From the above analysis, it could be concluded that the most important problem of the respondents by reading books through mobile phones were slow downloading.

5. FINDINGS

The following are the findings of the study:

- It can be deduced from the analysis that majority of the respondents (89.44%) using Smart Phones.
- Frequency of reading books through mobile phones was studied and founded that the respondents using mobile phones twice in a week have enhancing their knowledge. The Chi-Square test have proud that there is a close relationship between frequency of using mobile phones and enhancing their knowledge.
- Majority of the respondents (41%) are spent minimum 3 hours time for using mobile phone and enhancing their level of knowledge.
- The above figure shows that majority of the respondents (42.5%) spent about 1 hour for online reading through mobile phones per day.
- From the analysis it's inferred that the majority of the respondents (42%) are using mobile phones for communication purpose.
- Slow Downloading was highlighted as the major problem faced by the respondents.

6. CONCLUSION

In recent times the mobile phones become a vital role for reading books. Further, the developments in Information and Communication Technology have warranted a paradigm shift from traditional reading to reading through mobile phones. It's hoped that this research will throw light on how mobile phones are using for reading. The researcher also brought to light the problems encounted by the users while reading books through mobile phones.

REFERENCES

[1] Kukulska-Hulme and Traxler, "Mobile Usability in Educational Contexts, What Have We Learnt? International Review of Research in Open and Distance Learning, Vol.8, No.2, 2007, pp.1-16.

[2] Afflerbach and Cho, 2008, Developing New Skills for Online Reading.

[3] Liyi Zhang and Wei Ma, "Correlation Analysis between Users Educational Level and Mobile Reading", Library Hi Tech, Vol.29, No.3, 2011, pp. 424-435.

[4] Kahari and Leslei, "The Effects of Cell Phone Use on the Study Habits of University of Zimbabwe First Year Faculty of Arts Students", International Journal of Education and Research, Vol.1, No.10, 2013, pp.1-12.

[5] Oyewusi *et al*. "Effect of Mobile Phone Use on Reading Habits of Private Secondary School Students in Oyo State", Nigeria, School Libraries Worldwide, Vol.20, No.1, 2014, pp.116-123.

[6] Maria Konnikov, "Being a Better Online Reader.", The New Yorker, July 16, 2014.

Applications ICT based Resources and Services used by Students of Angel College of Engineering and Technology, Tirupur : A Study

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Abstract

This paper highlights the changing dimensions of library services to upgradation of libraries. The recent advances technology has used libraries to the facilitated the building of digital learning environment. Various ICT based enabling technologies that can be used for information storage and dissemination.

The specific role of ICT plays in key role in academic libraries and information centers have become an absolute necessity. A well-structured questionnaire was sent for 250 students to collect the primary data from them. A total number of 190 filled in questionnaires were received showing over all response rate 76 %. The paper also indicates that it is probably counter-productive to evaluate students as one group.

Keywords: *Academic libraries, Engineering Students, Information Communication Technology, User study*

1. INTRODUCTION

Information communication technology is a genetic term used to devote activities connected witch computer based processing, storage and transfer of information. It includes microprocessor, cable access, television, fiber optics, satellites, word processing, electronic mail, video, robotics and such other. According to ALA Glossary, "Information communication technology is the application of computers and other technologies to the acquisition, organisation storage, retrieval and dissemination".

Information in digital form is both enabling and complicating. The electronic information is more accessible and available anywhere in the world with a few key strokes or mouse clicks. On the other hand, it is less accessible because it is not directly perceivable to humans unaided by technology. In the high end technological era, the ICT environment, in particular for the users of the library has shifted.

2. INFORMATION AND COMMUNICATION TECHNOLOGY

Information technology is about achieving the age old objectives and applications of information and communication in new and more efficient ways which facilitate the process of identification, collection, storing, processing and disseminating of information. The library and information science professionals are utilizing ICT to keep pace with the problem of information explosion. The benefit of instant access to digital information is the most distinguishing attribute of the information age.

3. APPLICATIONS OF ICTS IN ACADEMIC LIBRARIES

Academic libraries to take full advantage of the opportunities offered by ICT and its application in the library environment it must create extensive access to ICT and relevant tutorial packages on new technology applications, software and software management and CD-ROMs which will enable the ICT professionals within the library setting to install, manage, maintain and repair ICT easily and to assist other ICT users to maximize the opportunities offered by ICT as well as ensure effective collaboration such as in a digital.

Applications of ICT have become clear such as video conferencing which can be facilitated by the academic library. Other applications of the ICT specific to libraries could include access to online resources on the internet such as e-journals, e-books, e- magazines, and e-publishing. The advances being made in the field of

communication there are great possibilities for the application of ICT in academic libraries.

4. AIMS AND OBJECTIVES

The main objectives of the study were to analyze the pattern of applications of ICTs usage by students, its availability, student's knowledge of different computer applications and their opinion about applications of ICTs and its uses in learning. Purpose of internet use by respondents' level of their information retrieval skills widely used search engines by respondents' time spent by the respondents in online information searching activities problems faced by the respondents in accessing e-resources and online searching.

5. REVIEW OF LITERATURE

Singh, K.P. (2006) study on ICT in libraries and information centere of the Defence Research and Development Organization (DRDO) and Council of Scientific and Industrial Research (CSIR) in Delhi, India revealed that most of the libraries and information centers of the DRDO and the CSIR were using ICT in almost all areas of LIS activities. However, there are few libraries and information centers, particularly of the DRDO such as LASTEC Library, DIPR library and ISSA Library, which are in the preliminary stage in adopting ICT in their LIS activities.

Mohamed Haneefa, K. (2007) discussed the use of ICT based resources and services in special libraries in Kerala. His work presented results of an investigation which studied the contemporary use of ICT-based resources and services in special libraries in Kerala. The results of the study revealed that the ICT based resources used by the largest percentage of users was the e-mail. The next most widely used resource was worldwide web, which was being used by nearly 60 per cent of the library users. Many users were not satisfied with the application of ICT in their libraries and indicated 'inadequate ICT infrastructure' as their reason for dissatisfaction.

Murugesan N. and Balasubramani R. highlighted their study of the availability of ICT infrastructure with respect to status of automation, use of database management software, type of internet connection used and the availability of multilingual and antivirus software facilities in the R&D libraries of Tamilnadu. They noted the new trend world over is to move towards digital collection. Two major resources required for setting up and operating digital library collections are technology infrastructure and personnel. Technology infrastructure includes computer and other equipment like software and network connectivity. Personnel will be required for handling various tasks associated with the creation and maintenance of the ICT based services.

Dr. Sunil Kumar Satpathy and Rabindra K. Maharana (2011) jointly provided a paper on the necessity and benefits of ICT skills of LIS professionals working in various Engineering Institutes of Orissa (India) to examine their exposure to ICT tools and services and their management skills. The paper focused on the ICT skills of LIS professionals with some constructive outcomes for effective generalization.

6. METHODOLOGY

This study used questionnaire-based survey method. A well-structured questionnaire was sent to 250 students of ACET randomly selected samples to collect the primary data. Out of which, a total number of 190 filled in questionnaires were received and the overall response rate was 76%. Hence the entire 190 received responses were considered for the data analysis and interpretation. The collected data have been organized and tabulated by using statistical method and the responses shown in percentage.

Keeping in view the objectives of the study, an effort is made to evolve a suitable methodology for the research. The study is designed, developed, and carried out to determine and analyse the current status and application of ICTs is used to collect the data from the Survey method. A well designed questionnaire is used as a principal tool for the collection of data. Apart from questionnaire, interview and observation methods are adopted for data collection.

7. ANALYSIS OF DATA

The data collected were analyzed and inferences derived. The results of the study are as under:

Table 1 indicated that 36.84% users' access internet daily, 32.10% of respondents use Internet weekly22.64% users Internet fortnightly and only 8.42% use it monthly.

Table 1 Frequency to Access of Applications of ICT Resources

Period	Frequency	%
Daily	70	36.84
Weekly	61	32.10
Fortnightly	43	22.64
Monthly and above	16	8.42
Total	**100**	**100**

Table 2 show that majority 90.52% of the respondents use Google. The table summarizes the purpose and frequency.

Table 2 Frequency of Using Search Engines

Search Engine	Frequency	%
Google	172	90.52
Yahoo	3	1.58
Alta vista	9	4.74
Other Search Engines	6	3.16
Total	**100**	**100**

Table 3 reveals that most of the 40.72% of the respondent use ICT for convenience, followed by 37.62% respondent use ICT for speed of access, whereas 12.37% respondents use applications of ICTs for downloading/printable format and 9.27% respondents use applications of ICT for cost factor purposes.

Table 3 Preference Factor of Using Applications of ICTs

Purpose	Frequency	%
Speed of Access	73	37.62
Cost fact	18	9.27
Downloading/ Printable format	24	12.37
Convenience	79	40.72
Total	**100**	**100**

Table 4 shows that 50% of respondents using applications of ICTs in home followed by 24.23% College CSE NET centre browsing followed by 16.82%, and 3.60% of respondents using applications of ICTs from Public browsing centre and other places.

Table 4 Place of using ICT

ICT Access Place	Frequency	%
From the library	46	24.23
College CSE NET centre	32	16.82
From home	95	50.00
Public browsing centre	17	8.95
Total	**100**	**100**

Table 5 The purposes have been classified into four catagories. 63.16% respondents are use applications of ICTs for 'Academic purpose/ Studies of their own' followed by 18.42% respondents are use applications of ICTs for 'Enhancement of Knowledge' followed 10.53% respondents are use applications of ICTs 'Research\ Project work ' and 7.89% respondents use applications of ICTs for 'Publishing journal/article'.

Table 5 Purpose of Using Applications of ICTs

Purpose	Frequency	%
Academic purpose/ Studies	120	63.16
Publishing Journal/Article	15	7.89
Enhancement of Knowledge	35	18.42
Research\ Project	20	10.53
Total	**100**	**100**

8. FINDINGS

- Greater part 36.84 % of students access internet daily.
- Majority 90.52% of the respondents use Google.
- Better part 40.72 % of the respondent use applications of ICTs for convenience.
- Half of 50 % of respondents using applications of ICTs in home.
- The largest part 63.16% respondents are using applications of ICTs for Academic purpose/ Studies.

9. CONCLUSION

ICT provides students with a broad perspective. This important topic was selected as the focus of this study. The study found that ICT can be a useful tool to address problems in medical students. It is very clear from the study that the user of Tirunelveli Government Medical College have used ICT for development in their profession. ICT have become the important part of human life in the 21st Century for their study and knowledge.

REFERENCES

[1] N. Murugesan and R. Balasubramani, "Application of ICT based Resources and Services in Research and Development Libraries in Tamilnadu: An Analytical study", European Journal of Social Science, Vol.23, No.1, 2011, pp.154-161.

[2] Goswami (Anjana), "Application of Information Communication Technology in Library Services", Herald of Library Science, Lucknow, Vol. 40, No.1-2, 2001, pp.36-41.

[3] N. Murugesan and R. Balasubramani, "Evolution of ICT based services in Research and Development Libraries of Tamilnadu: A Study", Indian Journal of Information Sources and Services, Vol.1, No.2, 2011.

[4] S.M. Salgar, "Emerging Technology' Road Map to New Generation of Libraries Using Emerging Technology: Proceedings; Second International CALIBER 2004 (February 11-13,2004, New Delhi); Murthy, T A V, editor; p. 351-57; INFLIBNET Centre, Ahmedabad, 2004.

[5] E.A. Alampay, "Beyond Access to ICTs: Measuring Capabilities in the Information Society", International Journal of Education and Development Using Information and Communication Technology, Vol.2, No.3, 2006, pp.4-22.

[6] Ananthakrishnan, M. (2006, July). ICT for less privileged. Retrieved from http://www.digitaldivide.net/articles/view.php?ArticleID=629

[7] http://en.wikibooks.org/wiki/ICT_in_Education/The_Uses_of_ICTs_in_Education

[8] Md. Sohail and Andleeb Alvi, "Use of Web Resources by Medical Science Students of Aligarh Muslim University", DESIDOC Journal of Library & Information Technology, Vol.34, No.2, 2014, pp. 125-130.

ICT Facilities of Arts & Science College Libraries in Coimbatore Distict, Tamil Nadu: A Study

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Abstract

The main objectives of this study is to analyse the existing collections, ICT infrastructure and services , possibilities of introducing resource sharing and networking Activities among libraries, and to show the ICT skills among Librarians in 55 Arts & Science College libraries in Coimbatore District, Tamil Nadu. Questionnaire method was used to collect the required data and Simple random sampling method was used to analyse the collected data.

Keywords: *ICT skills, ICT facilities, Networking, Resource Sharing*

1. INTRODUCTION

Nowadays, Resource sharing and networking has altered the old concept of due to the multi-dimensional and multi directional expansion of published documents, enlargement of modern technology for information processing and dissemination, increasing cost of books and periodicals are some of the fundamental aspects which require information Resource sharing and networking among the libraries. Along with that entering inter-library loan practice, libraries thought intensely of resource sharing and networking for the spread of information which is the outcome of the rapid growth of publications and staying in the deficient budget they are trying to incorporate libraries carefully for resource sharing in their principle of collection development.

Users services are also consider to the resource sharing and networking Programme for its performance in providing access to shared resources effectively and efficiently. Many libraries are not organized and completely equipped to give services to the users satisfactorily should be taken care of. New information technology has made the activity of Resource sharing and networking extremely simple and convenient mode. This technology comes ahead for products and services of the library that have distorted the traditional library goals and activities which may be called the revolutionary modifications to the information field. By these, library can quickly do Resource sharing and networking Programme and services to their users very immediately and timely with affordable cost.

2. OBJECTIVES

- To investigate the existing collections, ICT infrastructure and services provided by Colleges Affiliated to Bharathiar University.
- To identify the ICT facilities of the college libraries Affiliated to Bharathiar University.
- To examine the ICT skills among Librarians working in colleges libraries affiliated to Bharathiar University.

3. REVIEW OF LITERATURE

Samantha Teplitzky(2017)1 The norms of a research community influence practice, and norms of openness and sharing can be shaped to encourage researchers who share in one aspect of their research cycle to share in another. Different sets of mandates have evolved to require that research data be made public, but not necessarily articles resulting from that collected data. In this paper, I ask to what extent publications in the Earth Sciences are more likely to be open access (in all of its definitions) when researchers open their data through the Pangaea repository. Citations from Pangaea data sets were studied to determine the level of open access for each article. This study finds that the proportion of gold open access articles linked to the repository increased 55% from 2010 to 2015 and 75% of articles were available from multiple open sources.

Veena G(2016)2 The main purpose of this study is to investigate the awareness and utilization of open access electronic information resources and related issues

among post graduate students of Mangalore University. A questionnaire-based survey method has been used in this research. A total of 180 questionnaires distributed but 152 were returned duly filled in as a sample. The findings shows that 72(47.36%) of respondents frequently used e-books/ e-journals,58(38.15%) of respondents acquired their open access e-resource usage skill through teachers/research supervisors,98(64.47%) of the respondents stated that they are satisfied with open access e-resources. The result of the study shows that majority of students are aware of open access e-resources

Santhi & Nagarajan(2015)3 The paper presents the results of a study on the impact of open access resources on teaching and research in engineering colleges, Puducherry. Eleven colleges were selected. The data were collected using questionnaire by census method. The study revealed that level of awareness and use of open access resources is up to the expectations. The students are highly satisfied with the open access resources used by the faculty for handling classes. The respondents also faced some constraints which have been highlighted.

Doraswamy Naick (2016)4 The article is explaining Networking of Engineering College Libraries Affiliated to JNTU, Kakinada in Andhra Pradesh: A Prototype Design based on Information Seeking Behaviors of Faculty members. The study states that most of the faculty members are well known the networking model and few of them anticipated to use the information retrieval. Majority of the staff members support the prototype model developed by the researcher.

Sunil Tyagi(2016)5 The aim of the article is to give the category of Library Automation and Networking in Engineering College Libraries of National Capital Region (NCR) of India. This study focuses the barriers of Library Automation and Networking of Engineering College Libraries of National Capital Region (NCR) and to offer the possible and cost effective explanation to eliminate these barriers and let the libraries to provide the standard and valuable services to the user community. The study is based on the research tools like surveys, fact-findings, enquiries of various kinds, well-structured questionnaire, observation and interview was also used to collect. In this study the research observed from the data out of eight libraries, four (50%) libraries are fully automated and three (37.50%) libraries are semi automated. This study provides the possible solution to rectify the barriers and tolerate the libraries to provide the quality services to the users.

Mothukuri Anjaiah (2014)6 The Internet is a prime resource of communication and distribution of information in the 21st century. Nowadays the Internet has an important element in academic institutions as it becomes a essential role in facing the information and communication requirements of institutions. The paper examined that the large number 93 (74.44%) of the faculty members and research scholars were collect the information via the internet for teaching and research process, most of the respondents 64(51.2) retrieving the e-information from university library and most of the respondents 52 (41.6%) are absolutely satisfied with the usage of UGC-Info-net e-journals and they have offered 1st rank to American Institute of Physics , 2nd rank to American Institute of Society on the basis of usage).

Siddike and Kalam 2012)7 Describes the users perceptions on networking and resource sharing among some of the academic libraries in Bangladesh, with information on common information-seeking behavior in the academic institutions. Objectives containing the demand for Modern Information Technology facilities by the researchers at academic organizations, the lack of adequate information resources and inefficiency of the interlibrary resource sharing system were analysed and concluded.

Mahadevan & Vijayakumar (2012)8 The study explores the pros and cons of ICT tools which are required for teaching and learning in Pharmacy Colleges of Tamilnadu and Puducherry. The sample population was confined to only Faculty Members among which 360 out of 400 questionnaires duly filled were received back with a response rate of 90%. The result shows that majority of the faculty members are aware of various ICT tools required for teaching and learning. The ICT tools and resources like Computers, CD-ROM, E-Journal, E-book, Video conferencing, Digital camera, Internet, Scanner, etc. are used to a large extent.

Suhyeon Yoo (2010)9 The study investigates few of the current challenges and resource sharing activities in Korea, especially from the viewpoints of the functions of national and international institution libraries in Korea.

4. METHODOLOGY

The literatures available on the title has been studied and reviewed to investigate the resource sharing and networking activities among the 55 Arts & Science College libraries in Coimbatore District. The well-structured questionnaire was prepared covering all the details of the objectives and sent it to the 55 libraries to collect the data. Collected primary data was tabulated and analysed by using the simple random sample methods.

5. ANALYSIS AND INTERPRETATION

Table-1 shows the collections of printed book in the college libraries. Majority of the colleges libraries has 50,001-75,000 (30.91%)books for circulation followed by 25.45% of the colleges has 25,001-50,000. Among that 9 libraries has below 25000 books and only 3 libraries has more than one lakhs books for circulation. This table indicates that no library has sufficient books to their users. As no library is sufficient in terms of quantity and quality of collection and as such the collections available in management college libraries calls for resource sharing and networking.

Table 1 Book Collections

Collections	No. of Libraries	%
Below 25,000	9	16.36
25,001-50,000	14	25.45
50,001-75,000	17	30.91
75,001-1,00,000	10	18.18
Above 1,00,000	5	09.10
Total	**55**	**100.00**

Table 2 illustrates that hundred percentages of the libraries circulate the books to their users. Majority of the libraries offered current awareness service, Reference & Information Service, Catalogue service etc., and 90.91 percentage of the libraries conduct the User Education/ orientation programme to their students to use the library user-friendly. Some of the libraries provided the Referral Service(63.64), Book Bankservice (56.37), Reprography service (41.82) respectively. Very few of the selected libraries exchange the books to Inter library loan (21.82).

Table 2 Services Offered by the Libraries

Sl.No.	Services	No. of Libraries	%
1	Circulation of Books	55	100
2	CAS	48	87.28
3	Referral Service	35	63.64
4	Reference & Information Service	53	96.37
5	Book Bank service	31	56.37
6	Catalogue service	45	81.82
7	Reprography service	23	41.82
8	User education / orientation programme	50	90.91
9	Inter library loan service	12	21.82

The table 3 identifies that most of the libraries having ICT facilities like E-mail / List Forum (89.10%), news paper clipping services (89.10), Digital Library Services (87.27%), CD ROM Database services (81.82%), Internet browsing services(81.82%) respectively. Some of the libraries having minimum level of ICT facilities such as Online Database Services (27.27%), Institutional Repository Services (18.18%), Web-OPAC (10.90%), Ask Librarian(7.27%).

Table 4 explains that most of the librarians having the high level skills for Office Automation (94.54%). It is followed by "operating system" (81.82%) and "library automation and networking" (78.18%), followed by Network Technologies (72.72), Institutional/Digital Repository (63.64)and Content Management System (63.64) Least importance has been given to "Web technologies and Web portal" (30.91%).

Table 5 shows that 83.64% of libraries are willing to participate in the resource sharing Library Network and 16.36% are not willing to participate in the proposed Library Resource Sharing and Networking programme.

Table 3 ICT Facilities

Sl. NO.	DESCRIPTION	YES	%	NO	%
1	Online Database Services	15	(27.27)	40	(72.73)
2	E-mail / List Forum	49	(89.10)	6	(10.90)
3	Digital Library Services	48	(87.27)	7	(12.73)
4	Institutional Repository Services	10	(18.18)	45	(81.82)
5	Web-OPAC	6	(10.90)	49	(89.10)
6	Ask Librarian	4	(7.27)	51	(92.73)
7	CD-ROM Database Services	45	(81.82)	10	(18.18)
8	Newspaper Clipping Services	49	(89.10)	6	(10.90)
9	Internet Browsing	45	(81.82)	10	(18.18)

Table 4 ICT Skills of the Librarians

Sl.No.	ICT Skills	High	Medium	Low
1	Operating System (LINEX/UNIX,dows) based etc)	45(81.82)	7(12.73)	3(5.45)
2	Library Automation & Networking LMS)	43(78.18)	10(18.18)	2(3.64)
3	Institutional/Digital Repository	35(63.64)	13(23.64)	7(12.72)
4	Web Technologies	17(30.91)	25(45.45)	13(23.64)
5	Network Technologies (LAN/MAN/WAN) etc)	40(72.72)	10(18.18)	5(9.10)
6	Office Automation	52(94.54)	2(3.64)	1(1.82)
7	Content Management System	35(63.64)	15(27.27)	10(18.18)

Table 5 Willingness to Share the Library Resources and Networks (N=55)

Willingness	No. of Colleges	%
Yes	46	83.64
No	9	16.36
Total	**55**	**100.00**

6. CONCLUSION

In general the outcome of the study suggest that the existing collections are very low for the expectation level of users and the libraries will strengthen the collections. The services provided by the library is not enough the book bank service, inter library loan service, reprography service etc., should be increased. The study recommends that librarians of the sample libraries should update their current trends in ICT skills. Most of the librarians are consent to share the resources and networking facilities available in the libraries. However, as noted earlier, to improve the prevailing poor services, care should immediately be taken to provide efficient resource sharing systems among the libraries through better management and use of modern technological facilities. Thus, it is important to take necessary actions to create an efficient net-working and resource sharing system among the libraries for offering enhanced services to the users of the district.

REFERENCES

[1] Samantha Teplitzky, "E-resources in the Engineering and Physical Sciences Libraries", IJLSIM, Vol, 8, No.2, 2017, pp.35-39.

[2] G. Veena, "Awareness and Use of Open Access Electronic Information Resources by University Students: A Study", International Journal of Digital Library Services, Vol.6, No.1, 2016, pp.15-19.

[3] Santhi & Nagarajan, "Impact of Open Access Resources on Teaching and Research in Engineering: with Reference to Faculty Members working in Puducherry Region", IJLIS, Vol.4, No.3, 2015, pp.98–105.

[4] Doraswamy Naick, "Networking of Engineering College Libraries Affiliated to JNTU, Kakinada in Andhra Pradesh: A Prototype Design based on Information Seeking Behaviour of Faculty", International Journal of Digital Library Services, Vol. 6, No.1, 2016, pp.17-31.

[5] Sunil Tyagi, "Library Automation and Networking in Engineering College Libraries of National Capital Region of India: A Study", International Journal of Library Science, Vol.14, No.2, 2016, pp.47-52.

[6] Mothukuri Anjaiah, "Access and Effective use of UGC-INFONET e-journals by the Faculty Members and Research Scholars at University Library, Annamalai University, Tamil Nadu-A Case Study",IJDLS, Vol.4, No.1, 2014, pp.30-45.

[7] Siddike and Md.Abul Kalm, "Users Perceptions Regarding Networks and Resource Sharing in Selected Academic Libraries of Bangladesh. Library Philosophy and Practice, Vol.9, No.2, 2012, pp.89-98.

[8] Mahadevan and Vijayakumar, "A Study on the Use of Information and Communication Technology (ICT) Tools in Pharmacy College Libraries of Tamilnadu and Puducherry",International Journal of Library and Information Science,Vol.1, No.1, 2012, pp.81-88

[9] Suhyeon Yoo, "Document Delivery through Domestic and International Collaborations: the KISTI Practice", Interlending and Document Supply, Vol.38, No.3, 2010, pp.175-182.

A Study on Rank-wise Usability of E- Resources among the Faculty Members of Engineering Colleges in Coimbatore and Tiruppur Districts

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Abstract

The Paper appraisement the usability of the e-resources among the faculty members of engineering colleges in Coimbatore and Tirupur Districts. A Survey and evaluate 972 faculty members is conducted through a questionnaire. The analysis of the collected data covers the rank wise details is useful of electronic resources to improving the knowledge of faculty members. This concludes that the intention of the rank wise use of electronic resources has been the improving knowledge of the users in the field of academic.

Keywords: *E-Resources, Information Literacy, Rank wise Collection*

1. INTRODUCTION

An electronic resource is any information source that the library provides access to in an electronic format. The engineering college libraries are moving fastly towards e resources. Technology has been an important driving face for change. Electronic resources has vital role in the academic libraries. Electronic resources have become the most popular tools for research and academic activities. With the rabid development of information and communication technologies, e-resources are increasingly becoming readily available and accessible. E-Reources include lots of things: e books, e Journals, online database, online newspaper, etc.

2. LITERATURE REVIEW

Deng (2010) explored the pattern and trend of accessing and using e-resources in a university library in Australia. He showed that the use of e-resources is very much dependent on the user and the purpose of using e-resources. Balas (2003) Access to electronic resources not only influences the way students and scholars conduct research, it also changes the way they use the traditional library. Doraswamy (2007) attempted to determine the present status of knowledge and use of digital resources by 160 faculty members through CD-ROM databases, online databases, online journals OPAC etc available in the engineering college libraries. It was observed that use of digital resources was still inadequate among the engineering faculty of the universities in entire developing countries.

3. OBJECTIVES OF THE STUDY

The main objectives of the study are to present the rank -wise utilization of e-resources identified by the survey of engineering colleges in Coimbatore and Tiruppur districts.

The main objectives is the ranking wise usage of e resources by faculty members

- To identify gender wise usage of e-resources in engineering colleges
- To identify Designation and Experience wise usage of e-resources in engineering colleges
- To study of the familiarity and frequency in the use of the different types of e resources
- To analyze the respondents extent of access to E-Resources
- To determine the level of satisfaction by the faculty members

4. METHODOLOGY

The present study intends to study the usability of e resources among the faculty members. Hence, survey method was adopted to collect data from the faculty members.The questionnaires were distributed among 1200 users of engineering college faculty members in Coimbatore and tiruppur Districts. However, 972 of responded and the same were used for this study. The analysis and interpretation of the data is presented in the subsequent sections.

5. DATA ANALYSIS AND INTERPRETATION

The Table 1 shows that 57.7% of respondent are under the category of male Genders and remaining 42.3% are comes under female Genders.

The Table 2 shows that 37.2% of respondents are comes under the age group of below 30 years and 25.3% of respondents comes under the age group of 31-40 yrs and 37.4 % of respondents are comes under the age group of above 40 years.

Table 1 Gender-wise Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	561	57.7	57.7	57.7
Female	411	42.3	42.3	100
Total	**972**	**100.0**	**100.0**	

Table 2 Age-wise Faculty Members

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Below 30	362	37.2	37.2	37.2
31-40 yrs	362	25.3	25.3	62.6
above 40 yrs	364	37.4	37.4	100.0
Total	**972**	**100.0**	**100.0**	

The Table 3 shows that 68.6% of respondents are post graduates and 31.4% of respondents are doctorates.

Table 3 Qualification-wise Faculty Members

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
PG	667	68.6	68.6	68.6
PhD	305	31.4	31.4	100.0
Total	**972**	**100.0**	**100.0**	

The Tables 4 shows that 15.5 % of the respondents are having below 5 years of experience and 32.5% of the respondents are having 5-10 years of Experience and 28.9% of the respondents are having 11-15 years of experience and 11.7% of respondents are having 16-20 years of experience and 11.3% of the respondents are having above 20 years of Experience.

The table 5 shows the rank position of e- books in that 19.3 % of respondents are suggested 1st rank and 50% of respondents are suggested 2nd rank and 13.4 % of the respondents are suggested 3 rd rank and 17.3 % of the respondents suggested 4th rank.

Table 4 Experience-wise Faculty Members

Years	Frequency	Percent	Valid Percent	Cumulative Percent
Below 5 yrs	151	15.5	15.5	15.5
5-10 yrs	316	32.5	32.5	48.0
11-15 yrs	281	28.9	28.9	77.0
16-20 yrs	114	11.7	11.7	88.7
above 20 yrs	110	11.3	11.3	100.0
Total	**972**	**100.0**	**100.0**	

Table 5 Rank E-Books

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
1	188	19.3	19.3	19.3
2	486	50.0	50.0	69.3
3	130	13.4	13.4	82.7
4	168	17.3	17.3	100.0
Total	**972**	**100.0**	**100.0**	

The Table 6 shows the rank position of e journals in that 15.3 % of respondents are suggested 1st rank and 56% of respondents are suggested 2nd rank and 26.7 % of the respondents are suggested 3 rd rank and 2 % of the respondents suggested 4th rank.

The Table 7 shows the rank position of Online Database in that 53.4 % of respondents are suggested 1st rank and 36.9% of respondents are suggested 2nd rank and 9.7 % of the respondents are suggested 3 rd rank.

Table 6 Rank E-Journals

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
1	149	15.3	15.3	15.3
2	544	56.0	56.0	71.3
3	260	26.7	26.7	98.0
4	19	2.0	2.0	100.0
Total	**972**	**100.0**	**100.0**	

Table 7 Rank Online Database

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
1	519	53.4	53.4	53.4
2	359	36.9	36.9	90.3
3	94	9.7	9.7	100.0
Total	**972**	**100.0**	**100.0**	

The Table 8 shows the rank position of E- News Paper in that 18.9 % of respondents are suggested 1st rank and 32.5% of respondents are suggested 2nd rank and 32.6 % of the respondents are suggested 3 rd rank and 15.9 % of the respondents suggested 4th rank.

Table 8 Rank E – Newspaper

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
1	184	18.9	18.9	18.9
2	316	32.5	32.5	51.4
3	317	32.6	32.6	84.1
4	155	15.9	15.9	100.0
Total	**972**	**100.0**	**100.0**	

6. RESULTS

- 57.7%of male and 42.3%of female respondents are study participants.
- 667(68.6) respondents have PG qualification and the remaining 305(31.4) respondents have PhD qualification.
- 19.3 % of respondents are suggested 1st rank and 50% of respondents are suggested 2nd rank for e-books.
- 15.3 % of respondents are suggested 1st rank and 56% of respondents are suggested 2nd rank for e-journals.
- 53.4 % of respondents are suggested 1st rank and 36.9% of respondents are suggested 2nd rank for online database.
- 18.9 % of respondents are suggested 1st rank and 32.5% of respondents are suggested 2nd rank for e-newspaper.
- Main reasons for using e-resources are ranking wise as follows, Online Database
- E-Books, E-Journals and Online News Paper.
- Educational have significant difference between the listed e-resources.

7. SUGGESTION AND CONCLUSSION

Based on the study following suggestion are made to improve the use of e-resources among the faculty members. The Awareness programmes regarding e-resources shall be conducted by librarian so that users can understand use the resources effectively. Academic

excellence by providing them the latest information and access to learn worldwide information. E-Resources are relatively to learning the platform. Faculty members are easily accesses any where from the world to get information from E resources.

REFERENCES

[1] Research Trends in Library and Information Science 2016.
[2] New Dimensions in Academic Writing & Library Services 2015.
[3] All India Council for Technical Education, Approval Process Handbook. 017-18, pp.115-117.
[4] P. Thangavel, Dr.M. Jayaprakash, T. Prakash and B.Santhi, "Role of Virtual Learning and their Issues", International Journal of Science and Humanities, Vol.1, No.1A, 2015.
[5] P.Thangavel and Dr.M.Jayaprakash, "E-Resources Problems and Perspectives in Information Technology", South Asian Journal of Engineering and Technology, Vol.2, No.21, 2015, pp.40-43.

Use of Internet by the Faculty Members of Engineering Colleges in Coimbatore District: A Study

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Abstract

This article explains the Utilization of Internet Resources by the Faculty Members of Engineering Colleges in Coimbatore District. This study analyses the usability of internet resources with respect to Coimbatore District. A total of 816 respondents taken this survey which implies the age groups of 25-35 are using the internet resources actively for the purpose of self learning and spending 3-4 hours daily in the Internet for searching information. Internet provides all kind of information in the digital driven era. The functionality of internet usage among the faculty members of engineering colleges is very high but the effective utilization of this tool can be accessed in various parameters.

Keywords: *Internet Resources, Engineering Colleges and Faculty Members*

1. INTRODUCTION

Information and knowledge can be acquired in many ways through experience and observation of external phenomena, through self study, through formal education and academic infrastructure, through research and experiment. The most important and central aid in the process of education whether formal or informal is the Library, academic, special or public, each type catering to particular groups of people with specific interests and information needs and requirements. Libraries serve people from all walks of life and involved in all types of activity right from those connected with governing and shaping national destiny, and these inventing or discovering something new in science and technology which changes its course, to those who are preparing themselves to enter their chosen fields and professions. The use of Internet is quickly increasing outstanding to its effectiveness and capability in providing right information to the right person at the right time. It uses throughout the world around the clock and connects every curve of the world. Internet has become an inevitable necessity for every society of every country. Internet is also gateway for libraries and information centers to enter the Electronic Information Age and is providing the information, produced by different organizations, institutions, societies, research centers and individuals all over the world.

Engineering education plays a vital role that builds and encourages scientific temper a professional skills and moulds young minds to study, ponder and achieve. Faculty requires sound knowledge through which appropriate skills that can acquire, and scattered to the students.

2. REVIEW OF LITERATURE

Baby and Kumaravel (2011) pointed out that the 86.27% of the staff members used internet services most frequently. Study further reveals that the library visited by the users is being increased with the passage of time due to certain reasons; one of them is presently libraries equipped with technological resources. Considering these signs, libraries having sufficient space to entertain the users and their requirements, library should have sufficient space for latest additions and required documents to encourage the users to visit regularly. They suggested college management should make a favorable environment which promotes extra sophisticated information research processes.

Bolarinwa, A.J et. al (2014) carried out a study on "Internet Use by Academic Staff of Rufus Giwa Engineering, Owo and Ondo State, Nigeria". With the evolution of media, Information and Communication Technology globally, Internet has been a major tool in academic activities. To this end, this study was carried out to evaluate the Internet use by academic staff of Rufus Giwa Engineering, Owo, Ondo State, Nigeria. A total number of 100 copies of structured questionnaire were administered out of which 81 were retrieved. Data

generated from the respondents were analyzed using frequency count and percentile. The analysis of the data revealed a positive indication on the usage of Internet by the academic staff of the Institution. It was however, observed that most of the Assistant Professors do not have access to Internet facilities in their respective offices as well as inadequate training on Internet search knowledge. The paper recommends among other things, the installation of Internet services in the Institution to connect offices of academic staff, improve the connectivity power of Internet services within the perimeter of the Engineering and Management should improve on the training of staff on Internet search knowledge.

Khan and Dominic (2009) added in their study that use of internet is vice versa of conventional documents. Dependency on internet is increasingly enhanced with the passage of time, so it is need of hours, that speed of internet as well as number of users as they increasingly growth, to be considered keenly and necessary steps to be taken towards it, so that access of information for every users to be assured at minimum levels.
Husain Al- Ansari (2006) investigated of internet use by the faculty including purpose for use, its impact on teaching and research, internet resources that they use, and the problems faced while using the internet a questionnaire, expert- 137 received and pilot-tested was used to collect data from the faculty coming from four colleges of Kuwait University that is Arts, social science, sciences and responses rate of 62.6 percent.

3. OBJECTIVES OF THE STUDY

The objective of the study is to analyze the Utilization of Internet Resources by the Faculty members of Engineering colleges in Coimbatore District, Distribution of Gender, distribution of Age, frequency of Library Visit, distribution of respondents on the basis of hours spending in Internet from library, distribution of respondents on the basis of mode of learning the Internet and to identify the respondents attitude of preferences in on-line teaching and learning.

4. METHODOLOGY

The Questionnaire method is used to evaluate Engineering Faculty member's familiarity with use of Internet and related resources. The Questionnaire specified that the survey is for faculty member's and included a brief description of the survey. The information sheet has question and answer format to provide participants with information about research studies in general and this study in particular. This study is limited to Self finance Engineering Colleges, Government Engineering College and Government aided Engineering colleges of Coimbatore District.

5. DATA ANALYSIS AND INTERPRETATION

In table 1 indicates that the distribution of the sample. It is inferred from the survey 900 questionnaires are distributed, after 816 questionnaires are responded. The sample wise responded in to 90.66 percentages.

Table 2 shows the gender wise distribution. It is inferred from the survey, 59.8% of the respondents are male and 40.2% of the respondents are female.

Table 3 explains the details of age wise classification. It is observed from the table that 37.74% of the respondents are 25-35 years of age, 34.68% of the respondents are 36-45 years of age, 18.01% of the respondents are 46-55 years of age and 9.55% of the respondents are above 55 years of age. So majority of the respondents are in the age group of 25-35 years of age group.

It is inferred from the Table 4 that 62.74% of the respondents used the library daily, 25.36% of the respondents used the library once in a week followed by 12.62% of the respondents used the library once in a month, 0.73% of the respondents used library when required and once in two months. Majority of the Faculty members used library daily. It is clearly from the above table most of them used the library in the frequent of daily.

It is inferred from the table that 5 50.49% of the respondents are spending in internet 3-4 hours, 25.12% of the respondents are spending in internet 2-3 hours, 11.15% of the respondents are spending in internet 4-5 hours, 10.78% of the respondents are spending in internet less than 2 hours, and only 2.45% of the respondents are spending the internet more than 5 hours. So based on the result it could seen clearly from the above discussion more than 50.00% of the respondents are spending in internet 3-4 hours from library.

Table 1 Distribution of the Sample

Sl.No.	Designation	No. of Questionnaire Distributed	No. of Questionnaire Responded	Percentage (%)
1	Assistant Professor	500	458	50.88
2	Associate Professor	300	283	31.44
3	Professor	100	75	8.33
Total		**900**	**816**	**90.66**

Table 2 Distribution of Gender

Sl.No.	Gender	No. of Respondents	Percentage (%)
1	Male	488	59.80
2	Female	328	40.20
Total		**816**	**100.00**

Table 3 Distributions of Age-wise

Sl.No.	Age	No. of Respondents	Percentage (%)
1	25-35	308	37.74
2	36-.45	283	34.68
3	46-55	147	18.01
4	Above 55	78	9.55
Total		**816**	**100.00**

Table 4 Distribution of Frequency of Library Usage

Sl.No.	Frequency of Library Use	No. of Respondents	Percentage (%)
1	Daily	512	62.74
2	Once in a week	207	25.36
3	Once in a month	103	12.62
4	Two months once	6	0.73
Total		**816**	**100.00**

Table 5 Distribution of Respondents on the Basis of Hours Spending in Internet (in hours) from Library

Sl.No.	Hours spending in Internet	No. of Respondents	Percentage (%)
1	3-4 hours	412	50.49
2	2-3 hours	205	25.12
3	4-5 hours	91	11.15
4	Less than 2 hours	88	10.78
5	More than 5 hours	20	2.45
Total		**816**	**100.00**

Table 6 indicates that on the basis of mode of learning the internet 63.48% of the respondents are self learning, 24.14% of the respondents are learning from faculty and friends and 12.37% of the respondents are learning from training courses and experts. So it could be seen clearly from the above discussion more than 60% of the respondents are learning internet from self learning.

Table 7 explained that distribution of preferring on-line teaching and learning level are highly 493 (60.41%), followed by Moderate level 276(33.82%) and low level are 47 (5.75%).

Table 6 Distribution of Respondents on the basis of Mode of Learning the Internet Resources

Sl.No.	Mode of Learning Internet	No. of Respondents	Percentage (%)
1	Self-learning	518	63.48
2	From faculty and friends	197	24.14
3	Training courses from experts	101	12.37
Total		**816**	**100.00**

Table 7 Distribution of Preferring on-line Teaching and Learning the Internet Resources

Sl.No.	Online Teaching and Learning	No. of Respondents	Percentage (%)
1	High	493	60.41
2	Moderate	276	33.82
3	Low	47	5.75
Total		**816**	**100.00**

6. FINDINGS & SUGGESTIONS

This study gives a clear cut understanding on the utilization of internet resources among the faculties of engineering colleges of Coimbatore District. Though Coimbatore district has a plenty of engineering institutes in Tamilnadu, It's a right segment to analyze the impact of internet among the engineering education faculties. It is evident that Internet plays a vital role in self learning and searching of new disciplines in different mode of learning perspectives.

It is suggested that all kind of streams need to conduct this kind of study and create some sort of awareness on digital resources, repositories and subject gateways in every disciplines among the faculties. This really yields a good result of familiarization of resources available over the internet medium.

7. CONCLUSION

In recent years information has been made available on the Web easily. High quality information is often stored in dedicated databases of digital libraries, which are on their way to become expanding islands of well organized information. However, managing this information still poses challenges. The Internet provides technologies that are about to meet these challenges and required the right information. With the advent of Internet, Information and Communication Technology the mode of teaching and learning is getting change drastically and the tools are used for primarily for teaching, learning, personal and recreational purposes. The usability and reach of the Internet have been imparted effectively among the Faculty Members of Engineering in both educational learning and knowledge-oriented applications. Here there is a question of all those information which are available over the internet medium is accurate, authenticated, and reliable. The knowledge on subject gateways, portals and Repositories may enhance the skill of every faculty in their respective disciplines.

REFERENCES

[1] Ansari, Al.Husain, "Internet Use by the Faculty Members of Kuwait University", The Electronic Library, Vol.24, No.6, 2014, pp.791-803.

[2] Baby and Kumaravel, "Literature Searching Pattern of the Faculty of Sri Sarada College for Women: A Study", International Journal of Library and Information Science Vol.3, No.11, 2011, pp. 224-229.

[3] A.J Bolarinwa and R. F. Aladeniyi, *etal.* "Internet Use by Academic Staff of Rufus Giwa Engineering, Owo, Ondo State, Nigeria", American International Journal of Contemporary Research, Vol.4, No.9, 2014, pp.99-105.

[4] S. Khan and J.Dominic, "Use of Internet by the Faculty Members of Engineering Colleges of Moradabad: A Comparative Study, International Conference on Academic Libraries (ICAL 2009) October 5 to 8, University of Delhi, Delhi. 2009.

[5] R. Kumar and A. Kaur, "Internet Use by Teachers and Students in Engineering Colleges of Punjab, Haryana and Himachal Pradesh states of India: An Analysis", Electronic Journal of Academic and Special Librarianship, Vol.7, No.1, 2006.

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[1] K.C.Garg, B.Dutt and Suresh Kumar, "Scientometric Profile of Indian Science as Seen Through Science Citation Index", Annals of Library and Information Studies, Vol. 53 No. 3, 2006, pp.114-125.
[2] S.Mohamed Esmail, G.Vetrikondan and M.Raja, "Information Access Pattern of Teaching Staff and Research Scholars of Natural Science in Annamalai Univiersity", Indian Journal of Information, Library and Society, Vol. 17 No. 1-2, 2004, pp.17-26.

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