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Indian Journal of Anesthesia and Analgesia Indian Journal of Biology	6	8000	7500	625	586 430	
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Indian Journal of Genetics and Molecular Research	2	7500	7000	586	547	
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Indian Journal of Legal Medicine	2	9000	8500	703	664	
Indian Journal of Library and Information Science	3	10000	9500	781	742	
Indian Journal of Maternal-Fetal & Neonatal Medicine	2	7500	9500 7000	781	742 547	
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International Journal of Neurology and Neurosurgery	4	11000	10500	859	820	
International Journal of Pediatric Nursing	3	6000	5500	469	430	
International Journal of Political Science	2	6500	6000	508	469	
International Journal of Practical Nursing	3	6000	5500	469	430	
Journal of Animal Feed Science and Technology	2	8300	7300	648	609	
Journal of Cardiovascular Medicine and Surgery	4	10500	10000	820	781	
Journal of Emergency and Trauma Nursing	2	6000	5500	469	430	
Journal of Forensic Chemistry and Toxicology	2	10000	9500	781	742	
Journal of Global Medical Education and Research	2	6400	5900	500	461	
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Indexing information: The journal is indexed with Indian Citation Index (ICI), India; Google Scholar; Index Copernicus, Poland; National Science Library, New Delhi; Genamics JournalSeek; Science Library Index; The International Committee of Medical Journal Editors (ICMJE).

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Printed at: Soujanya Printing Press, B-303, Okhla Industrial Area Phase-I, New Delhi - 110020.

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

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Indexing information: The journal is indexed with Indian Citation Index (ICI), India; Google Scholar; Index Copernicus, Poland; National Science Library, New Delhi; Genamics JournalSeek; Science Library Index; The International Committee of Medical Journal Editors (ICMJE).

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Indian Journal of Library and Information Science

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January - April 2022 Volume 16 Number 1

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Research Productivity of Human DNA: A Scientometric Study

P Murugiah

How to cite this article:

P Murugiah/Research Productivity of Human DNA: A Scientometric Study/Indian J Lib Inf Sci 2022;16(1):9-21.

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 Received on: 22.11.2021
 Accepted on: 30.11.2021

Abstract

The data has been formatted in Microsoft office exceeds expectations arrangement to avoid the duplication of the downloaded information. The totally 17112 records have been retrieved from the Scopus database for the period of study. Finally, the research has been done for analyzing the data only 17102 taken for further discussion. Results: The most noteworthy efficiency is recorded in 1995 with 767 papers (4.48% of the complete papers in a quarter-century). It is seen that the most minimal Relative Growth Rate (RGR) 0.04 found in 2008, 2010 2012 and 2014 RGR ascended to 0.75 in 1990 and a normal mean estimation of RGR was 0.15. The Dt was an expanding pattern showed up from 0.95 to 17.33 and a diminished tend showed up as 13.86 in the year 2011. The mean RGR between 0.08 to 0.15 and the mean for Dt from 2037 to 9.70. Clearly mean for RGR indicated an expanding and diminishing pattern saw during the period. The Relative Growth Rate is 0.64 in 1990 and 0.06 in 2013. The Dt development pattern showed up from 1.08 in 1990 it ascended to 11.55 in 2014. A normal mean of RGR and Dt was 0.13 and 7.24 separately. The RGR was seeing that fluctuating patterns go somewhere in the range of 0.04 and 0.28 in over the time of the study. The DT showed up the fluctuating pattern during the period. A normal mean of RGR and DT were 0.14 and 8.16 separately.

Keywords: Human DNA; Scientometrics; Year-wise publications; Relative Growth Rate (RGR); Doubling time (Dt); Medline.

Introduction

Our bodies are made of numerous cells; each molecular fuse an entire proliferation of an individual's genetic plan or plan. This hereditary arrangement is bundled inside the phones inside the design of genes. Chromosomes will be thought of as being produced using strings of genes (Genetics Home Reference 2012). The body is made from numerous option varieties of cells, the limit of which incorporate chromosomes. The chromosome comprises of firmly snaked DNA strands. DNA fuses fundamentally all the data to make an individual's being. The information is 'put away' inside the qualities. At the point when the qualities are activated, proteins are made and transported to where they're needed. The human DNA codes for 31,000 to 39,000 qualities. Every quality is a blessing in duplicates, one from the daddy and one from the mother. The mixed articulation of the entirety of the qualities determines everything that delivers every one individual interesting (Immune Deficiency Foundation 2008).²

DNA (deoxyribonucleic corrosive) is that the hereditary material of basically all living beings, including people. It's a dreadfully straightforward concoction arrangement, which joins four distinct nucleotides or bases called adenine, thymine, cytosine, and guanine which are regularly known by the letters A, T, C, and G. The DNA is found in pretty much every cell inside the body, from platelets to skin cells, to liver cells, and furthermore the request for the bases is that a similar by and large the cells from one individual (Butler. G). Just limited quantities of muscle are required to get a DNA profile. Distributed rules suggest that 1 gram of muscle be taken much of the time; 100 mg of tissue (at 3-4 mm shape) will give plentiful DNA to the investigation (ICPO 2009).

Review of Literature

Koenig (1983), analyzed the pharmaceutical exploration from a bibliometric point of view. The investigation found that there are bibliometric associates of fruitful pharmaceutical exploration, explicitly, the sum and extent of the star (exceptionally referred to) clinical medication articles. The examination uncovers that organization research detailed in fundamental biomedical exploration diaries is unbelievably profoundly referred to, on a standard with NIH bolstered graduate school research.

Schubert. A Zsindely and Braun (1985)⁶, examined that, end up being more beneficial creators than "normal researchers" of the indistinguishable nation, yet no specific greatness of the educators might be uncovered. A relationship was found between the norm of clinical medication papers and hence the bleakness inside the nations being referred to. Gupta (1989)³, led an investigation on the reference index of the biochemical writing of Nigeria for the sum, 1970–1984. Lotka's law and Egghe's hypothesis and equation were acclimated test 80/20-rule and it completely was discovered that the standard didn't have any significant bearing to any of the four informational collections.

Gomez Sanz and Mendez (1990)⁷, have directed an investigation on A bibliometric examination of the Spanish distributions committed to the systema nervosum, as secured by the database BIOSIS Previews during the years 1983–1986, the examination endeavor has been made to get bibliometric markers that edify the particular highlights of this exploration subfield in Spain, which are fit to be utilized for science strategy choices. Baskaran (2013) analyzed that informatics focuses on understanding issues from a stakeholder perspective and applying information and other technologies as needed.

That is, it deals with system problems first, not individual technologies in the system. In this regard, informatics considers the technology to be the answer to technical decisions, as it believes that technology is "developed according to its own laws, has its own potential, and is limited only by available material resources." can do. Baskaran (2013) used a total of 6610 records from the Web of Science to contribute to the academic productivity and research of the encryption fields in four major countries: China, the United States, Taiwan, and Japan. It was analyzed that the distribution of diversity was evaluated and related research areas. Baskaran (2013) argued that doubling time (Dt) tends to increase and decrease in this study. The degree of cooperation and its average value is determined to be 0.963.

The three institutions of are productivity leaders. That is, Aragappa University, National Chenking University, Anna University, where CECRI is located. Baskaran and Binu (2019) analyzed that most of the 416 respondents (98.8%) were looking for educational and research information. Research results can determine various parameters of scientific access to electronic resources. Research facilitates the acquisition of electronic information and helps stimulate user research and academic thinking. Baskaran (2018) investigated the role of computers in the provision of education.

Baskaran (2016) discussed the best papers published in the Bioinformatics Journal, and scientists contributed most of the Harvard papers to this study. Both RGR and DT showed this trend throughout the study. Baskaran (2015) investigated the three most important paradigm shifts in 21 library environments. Baskaran (2015) analyzed that US scholars contributed a total of 15832 (30.815%) of articles, 87.947% of which were published as journals. article. Harvard scientists have received a lot of attention in various research papers and occupy a leading position in research collaboration in the field of enzyme research. Baskaran (2012) argued that doubling time (Dt) tended to fluctuate during the study period.

The results use the least squares method to exclude productive authors and the maximum likelihood method to examine the exponential growth of authors. In the process, it was decided that Lotka's law was applicable to graph theory research. Baskaran and Ramesh (2019) analyzed that the study analyzed that electronic information access patterns between faculty and staff play an important role in performing a variety of tasks for engineering respondents. According to this survey, the survey aims to analyze that 76% of respondents are male, of which 26% are female.

Baskaran and Ramesh Babu (2019) investigated the publishing productivity of forensic outcomes from 1989 to 2016. Growth of publications in research, RGR and Dt of research results, cooperation between authors. Baskaran (2018) analyzed that the highest SD is 21.71405 and 21.71405 Issues found Missing smartphone and lacking security of personal data. The best resume was 864.5, which was found in the absence of personal data security. Baskaran and Karuilancheran (2015) has a significance level of 29 degrees of freedom at C.V. 0.05, which gives a chi-square (X2) calculation of 5309,368. After that, the performance of researchers began to decline. It was supported by SPI, which is only between 9 and 10. Baskaran (2014) discussed the quantitative analysis of the productivity and characteristics of citations from Library and Information Science (LIS) publications from 2003 to 2012. A total of 1,942 articles and 12,502 citations have been published in the SSCI-indexed LIS journal. 21.36% of the citations were received in 2012. Baskaran, C. (2013) analyzed that 70 (59.1%) of faculty members who participated in the survey learned through 28 (56%) guidance from teachers / managers.

There is evidence that the majority of faculty and staff, 21 (42%), use their department to access information, and 28 (40%) of researchers access their department's e-journals. Baskaran (2019) analyzed 4,444,210 (55.26) respondents who were very happy with OPAC/Web-OPAC. 205 (53.90) respondents are very happy with EDatabases and 192 (50.52) respondents are very happy with the automated lending service.

Baskaran (2018) uses the software HistCite to publish on the number of publications, growth rate and doubling time, distribution of publications across journals, publication output, author patterns, and bioremediation research in India. We investigated a map of the impact of this on global quotes. , VOS viewer. Indian Institute of Technology, Baba Atomic Research Center, and CSIR are leading producers of research in the field of bioremediation. Sivakami and Baskaran (2016) analyzed a total of 64,030 datasets from the Medline database in this study. Resources of all types showed the largest decline in 2010 and 2011, with an average of 2,784 publications per year. We conducted a time series analysis of the most productive countries (US) and India and compared the results over the next few years.

Baskaran (2014) describes the quality of the collection in terms of books, magazines and resources. Yahoo is the most popular search engine for internet surfing. Book rental is a favorite of the staff. Saravanan and Baskaran (2019) investigated bibliographic binding, linguistic distribution, keyword distribution, geographical distribution of documents, and a history of local and global citations by established institutions. Analyzed by Bascalan (2019). Most of the 90 (33%), 76 (27.8), and 51 (18.7%) respondents said they "fully agree,"

"agree," "no comment," "easily accessible," and "prefer." I answered. Analyze large amounts of data. "Baskaran (2018) surveyed most publications in 44.15% of the two authors in the analysis of BM. Guptha has published 18 articles on DJ LIT and is the lead author.

Baskaran, (2013) explored Degree of collaboration and its' mean value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, National Cheng King University, and Anna University. Baskaran and Sivakami, (2014) discussed Quantitative analysis is carried out to identify the literature growth, authorship pattern, collaboration and journal distribution on Swine influenza disease research based on data obtained from Pubmed databases for a period from 2006-2010.

A total of 2360 articles were downloaded from Pubmed database using the search term "Swine*" subjected to bibliometric data analysis techniques. Baskaran (2013) analysed that Information science focuses on understanding problems from the perspective of stakeholders and then applying information and other technologies as needed. In other words, it tackles systemic problems first rather than individual pieces of technology within that system.

In this respect, information science can be seen as a response to technological determination, the belief that technology "develops by its own laws, that it realizes its own potential, limited only by the material resources available, Baskaran (2013) analysed that a total number of 6610 records which were retrieved from the Web of Science was used to assess the academic productivity and distribution of research diversity of cryptography field from four major countries China, USA, Taiwan and Japan which contributed more papers in cryptography and allied field of researches.

Baskaran (2013) discussed that Doubling time (Dt) was found to be increased and decreased trend in this study. Degree of collaboration and its means value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, National Cheng King University and Anna University. Baskaran and Binu (2019) analysed that Majority of respondents 416 (98.8%) are searching for educational and research Information. The findings of the study could identify the various parameters while access Electronic resources by the academic community. The study would helpful to bring to access Electronic Information for momentum of gain research and academic ideas among the users. Baskaran (2018) examined that computers became involved in the delivery of education, a proposed definition identifies the delivery of instructional materials, using both print and electronic media. Baskaran (2016) discussed the highest publication published in Bioinformatics journal and Harvard University scientists contributed highest number of publication in the study.

RGR and DT is exhibits that fluctuating trend happening whole period of study. Baskaran (2015) studied the three Major Paradigm Shifts 21st Century Library Setting, Revolutionary Changes, Library Roles, Millennial Generation, Cyber Infrastructure Characteristics, Major Challenges of 21st Century Librarian, Tasks, Library Should Be, the researchers expectations and so on. Baskaran (2015) analyzed the USA scientists have contributed totally 15832 (30.815%) items and include 87.947% percent are appeared as journal articles. Harvard University scientists are much attention in produced large number of research papers and they hold top level among research collaboration in enzyme research.

Baskaran (2012) discussed that Doubling Time (Dt) has shown as fluctuating trend during the period of study. The result examined the author exponential growth using least squares excluding high productive authors and maximum likelihood method. Lotka's law is found to be applicable to graph theory research during the study period. Baskaran and Ramesh (2019) analyzed that The study analyses Electronic information access pattern among the faculty members is the significant role in the Engineering institutions towards various tasks to fulfil by the respondents. The study aim to analyze that 76 percent of the respondents are male and 26 percent of them are female observed from the study.

Baskaran and Ramesh Babu (2019) examined the publication productivity of Forensic Medicine output during 1989-2016. The growth of the publications, RGR and Dt of the research output, Collaboration of authors, Collaborative co-efficient etc. in the study. Baskaran (2018) analyzed the highest SD was 21.71405 and 21.71405 the problems were found Do not have smart Phone and Lack of security on personal information. The highest CV was 864.5 found on Lack of security on personal information. Baskaran and Karuilancheran (2015) analyzed the C.V. at 0.05 significant level for 29 degrees of freedom is 42.56 and the calculated value of Chi-Square (X2) obtained in this case is 5309.368. Afterwards, the performance of researchers started diminishing. It was supported by SPI that ranges

between 9 and 10 only. Baskaran (2014) discussed the quantitative analysis of the productivity and characteristics of citations of Library and Information Science (LIS) publications during 2003-2012. A Total of 1942 contributions published and 12102 citations received in the LIS journals indexed in SSCI. 21.36% of citations were received in 2012.

Baskaran, C. (2013) analyzed that faculty members who respondents to the study, 70 (59.1%) learned through guidance from their teachers/guide 28 (56%). It is proved that the highest proportion of faculty member, 21 (42%), use their department for accessing the information, while 28 (40%) of the research scholars were accessing their e-journals in their department itself. Baskaran (2019) analyzed the 210 (55.26) respondents are extremely satisfied on OPAC/Web OPAC. 205(53.90) respondents are extremely satisfied on E-Databases, 192(50.52) respondents are extremely satisfied on Automated circulation services.

Baskaran (2018) explored the map the number of publications, growth rate and doubling time, scattering of publication over journals, and its impact on publication output, authorship patterns and Global citation score of bioremediation research publication in India using the HistCite, VOSviewer software. Indian Institute of technology, Baba atomic research centre and CSIR are the major producers of research output in the area of bioremediation. Sivakami and Baskaran (2016) analysed that total of 64030 records were obtained from Medline databases have been taken for this study.

All kinds of resources are fallen in highest in the year 2010 & 2011 with average publications of 2,784 per year. The Time series analysis ware carried out for the top most productive country (USA) and India to compare the research output in forth coming years. Baskaran (2014) discussed quality of collection with respect to books, Journals and e-resources. Yahoo is most popular search engine among the user for browsing the net. Book lending service is the most prefer by the staff.

Saravanan, and Baskaran (2019) examined the identifies bibliographic coupling of the institution, language distribution, keyword distribution, geographical distribution of the literature and Historiography on Local and Global Citation is also analyzed. Baskaran (2019) analyzed the majority 90 (33%), 76 (27.8) and 51 (18.7%) of the respondents of them recorded that "Strongly Agree", "Agree", and "No Comment" respectively to prefer "Easy to access massive amount of data to analyse". Baskaran (2018) examined the majority

of publications 44.15% representing by the two authors in the analysis BM. Guptha was published 18 papers in DJLIT, who is a ranked 1 author. It followed by Chenupathi K. Ramiah shored second his publications.¹¹ University of Delhi, which is the top ranked institution. Binu and Baskaran (2017) analyzed the assess the user satisfaction with respect to the eresources and services. It reveals that majority of respondents are using e-resources at large extent or very large extent for different purposes. Users' satisfaction level is very high with respect to various electronic resources and services available in the library.

Ramesh Babu and Baskaran (2017) analyzed the analyses that research growth trend of Forensic Medicine during 1989-2015. It is observed highest out of Forensic Medicine research Forensic Medicine research in 2013 was 447 (11.05%) of the publications, followed by 420 (10.38%) of the publication brought out in 2015. the doubling time of the publications also a fluctuate trend appears whole study period. Baskaran (2020) analyzed the lowest relative growth rate (RGR; 0.04) was found in 2008. 2010, 2012, and 2014 RGR rose up to 0.75 in 1990, and the average mean value of relative growth rate (RGR) is 0.15. The highest number of publications (293; 63.55%) accumulated from information science library science.

This area has been ranked first among 21 research fields listed in the study. Baskaran (2020) describes Altmetrics use in public APIs across platforms to gather data with open scripts and algorithms. Altmetrics did not originally cover citation counts. It calculated scholar impact based on diverse online research output, such as social media, online news media, and online reference managers. Baskaran, C. (2020) analyzed the 11,941 total records on social networks and media retrieved from Web of Science database during the period of study. Palanivel and Baskaran (2018) studied the 2313 scholarly communications published in the Economic Affairs Journal.

The analysis cover mainly the number of articles, form of document, the study is obtained from the Scopus database in 2313 results for thirty seven years in this results retrieved are analyzed using excel worksheets. Pramanathan and Baskaran (2015) discussed the 199 (49.13%) and 131 (43.52%) of the respondents were female respondents from Bharathidasan University and Periyar University. Majority of the 310 (76.54%) and 198 (65.78%) of the respondents who have got research experience below 3 years from Bharathidasan and Periyar university. Murugaiah and Baskaran (2013) analyzed the high number of papers was collaborated with United States researchers in the field of Human DNA. The study measures the performance based on several parameters, country year-wise growth rate, authorship pattern, collaborative index, collaborative coefficient, leading collaborative countries and authors have contributed publications in Human DNA research. Baskaran (2020) discussed the maximum 290 (12.20%) of the publications contributed by the researchers from Central Electro chemical Research Institute was highly collaborated with Alagappa Universities, which has top Citations and h-Index 3852 and 32 respectively.

The propounded according to Google Scholar Metrics (GSM) SK Pandian was to be a top ranked researcher, despites his year wise citations shows 4491 and h-Index credited 36 during 2008-2018. Ramesh and Baskaran (2019) analyzed the respondents "Satisfied" with e-resources offering lecturing materials. This data presents that a large number of respondents 265 (51.0%) prefer gateway portal to a "Large Extent' and 139 (26.7%) of the respondents prefer to a "Very Large Extent". On the other hand, it has also been noticed that 105 (20.2%)of the respondents are "Less satisfied" whereas 11 (2.1%) of the respondents opted "No Comment". Baskaran (2018) discussed the majority of 63 (27.6%) specified "Aware" and Usage of Whatsapp, 53 (23.2%) You Tube, 47 (20.6%) Google+, 46 (20.2%) Face Book, 23 (10.1%) Tumbler/Messenger, 21 (9.2%) Twitter, 18 (7.9%) Others and 17 (7.5%) Instagram. Functions appropriate to their parent institutions.

Baskaran (2021) analyzed the majority 134 (1.96%) of the publications contributed by the researchers from the University of California systems. Zhang Y was the top author has contributed 16(0.23%) of the publications in the field of Web 2.0, subsequently, Kolt GS, Li Q, Vandelantte C, Zhang J, the publications equally appears 13(0.19%) of the publications. Baskaran and Pitchaipandi (2021) analyzed the respondents highly prefer group sites (Yahoo, Google, and Whatsapp).

The research analyses that social media tools for research the majority of the respondents highly preferred Facebook wall for shared the research information by the respondents in the eight Universities in Tamil Nadu. Pitchaipandi and Baskaran (2021) examined the 51.3% of the respondents visit 1/hr day in using WhatsApp. 78.9% of the respondents added the Whatsapp Groups from Friends of the respondents respectively. Among the WhatsApp as instructive help devices and administrations in a Thiruvalluvar University. Baskaran (2020) analyzed that there are twenty five institutions are listed, among them University of Washington has contributed highest 48 (0.98%) of the publications witnessed be a first position out of twenty five. Radhakrishnan and Baskaran, C. (2020) discussed there is a moderate correlation between Citation and Altmetric Score. Only one paper obtains citation and Altmetric score equally. Another paper gets citation and Altmetric score in near equal. Out of the 10 papers, four papers received more citations. Of the 4 highly cited articles, three papers receive very low Altmetric score and only one paper receives high Altmetric score.

Baskaran and Binu (2020) discussed that majority of respondents 109 (21.9%) are post graduates and 75 (17.8%) are having PG with NET qualification. Mean value for 'To borrow books' was 3.86 and assigned the rank one. Majority of respondents 416 (98.8%) are searching for educational and research Information. The findings of the study could identify the various parameters while access Electronic resources by the academic community. Baskaran and Ramesh (2020) analyzed that Two hundred fifty-one (48.3%) respondents rated that information sought from e-books are "excellent" while 205 (39.4%) of the respondents rated them as "very good."

Two hundred eighty (53.8%) respondents "agree" that electronic journals save the time of the user while 219 (42.1%) of the respondents "strongly agree." A miniscule number, 21 (4.0%), respondents "disagree." Baskaran, C. (2020) discussed that Currently, ROAR lists 1,793 and Open DOAR lists about 1,966 IRs all over the world. It is found that more institutions (47) installed the D-Space (62%). It is followed by e-prints adopted (26), and two institutions implemented OAR through GSDL. Ramesh, P and Baskaran, C. (2019) analysed that at a large number of respondents 265 (51.0%) prefer gateway portal to a "Large Extent' and 139 (26.7%) of the respondents prefer to a "Very Large Extent". On the other hand, it has also been noticed that 105 (20.2%) of the respondents are "Less satisfied" whereas 11 (2.1%) of the respondents opted "No Comment".

Radhakrishnan and Baskaran (2019) analyzed that square root of total authors, who have contributed 7.94% of the total contribution, is found to be 215.52 in Price square Root Law. The Pareto's 80/20 rules state that 20% of the authors contributed only 46.60% of the total contribution. Baskaran and Babu, P. R. (2019) discussed the

activity index and exponential growth of authors analysed during 1989-2016. The result of the study found that publications growth between 11 (0.26%)in 1989 and 447 (10.76%) in 201. RGR shows a fluctuates trend between 0.02 and 1.02 in 2005, 2006 and 1991 respectively. Complete twenty three years the research could be observed that RGR less than 1. Baskaran, C. (2018) discussed that highest of 2093 (13.94%) citations received by Prof. Sanjeeviraja out of 180 (11.41%) of the Publications during the period. Material Science has 5632 Citations for 488 Publications with the highest h-index was 37. Baskaran and Rameshbabu (2018) conducted the study largest output in was found 447 publications in 2013. It is found the DC between 0.64 and 0.94 and overall DC measured to be 23.08 throughout study period.

The study could be found DC was an increased and a decreased trend appeared in the whole study period. Value n in the field of Forensic Medicine is being analysed, it has calculated the exponential growth is n= 4.4320914 for author. Radhakrishnan and Baskaran (2018) discussed that maximum number of articles 114 (4.83%) were published in the year of 2015. In the Authorship Pattern, the major contribution of articles was from two authors 776 (32.87%). The Time series analysis technique reveals the estimated future growth of articles in the Journal will be increased from 63.81 (2016) to 88.13 in 2020 and 93.66 in the year 2021. Murugiah and Baskaran (2014) analyzed the document types, journal articles were the highest numbers with 7210 papers or 99.26%.

From this study, it is observed that the Journal of Biological Chemistry has published with 529 research papers and find top position which is accounted for 7.28% of the total articles. Sivakami and Baskaran (2014) analyzed that kinds of resources are fallen in highest in the year 2010 & 2011. Collaborative authors' productivity is more than a single contribution.

The degree of collaboration C= 0.884 represents 88 percent of collaborative authors article that were published during the study periods. Bradford's law fits well on sample. Baskaran, C. (2013) examined the Doubling time (Dt) was found to be increased and decreased trend in this study. Degree of collaboration and its means value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, National Cheng King University and Anna University. Veeramuthu and Baskaran (2018) analyzed the maximum articles 568 were published in the year 1999 and the minimum 46 in the year 1995. In the authorship pattern, the maximum articles 5131 were published by single author. The RGR in the starting year 1990 is 0.78 and 0.03 in the last year 2017. The Doubling time in the starting year 1990 was 0.88 and in the last year 2017 for 27.47. Baskaran, C. (2011) analyzed the Author's collaboration analyzed through Subramanian's formula and it expressed C= Nm/Nm+ Ns. Lotka's law and bradford's law of scattering were applied to count the author productivity and core journals in this specific subject. Lotka's law is n= 2 and Bradford's law scattering 1: n: n2.

These have been analysed in this study. Pitchaipandi and Baskaran (2020) investigated the The social Networks and Media exchange information, ideas and pictures/videos in virtual communities and networks. The assessment of this study was the role and consumption of Social Networks/Media Research Communication by the Students and Research Scholars' Social Science at Alagappa University, Karaikudi, Tamilnadu. Senthil Kumar and Baskaran (2018) discussed the Journal named "Advanced Materials Research" ranked in the top position in contributing articles 59 (2.28%) in this field. The highly prolific author is Monteiro S.N who has contributed 41 articles 0.47 %. Krishnan and Baskaran (2018) studied the maximum articles 1084 were published by four authors.

The RGR in the starting year 2000 is 0.71 and 0.12 in the last year 2017. The Doubling time in the starting year 2000 was 0.98 and in the last year 2017 was 5.96. In the Country wise distribution of articles, the major contribution was from China 1381 (19.21%). Baskaran, and Anbu, S. G. (2011) attempt to the internet based resources by the students of Hindustan college of Engineering, Chennai (India). The aim is to determine the use of Internet based resources by the students skills in handing the different types of documents can access to academic and various purposes. This survey reflects the availability of e-resources and typically examines the quantum of their use in Hindustan college of Engineering.

Results

The research development of publications distributions in the field of human DNA for 25 years from 1989 to 2013. Table 1 is discovered that the absolute best efficiency is recorded in 1995 with 767 papers (4.48% of the whole papers at a quarter century), trailed by 756 (4.42%) of the distributions in 1996. It's seen that the profitability of exploration ranges between about 3.49 % and 4.48% out of

17102 distributions during the time of study. There has been a fluctuating pattern appeared inside the exploration profitability from 1989 to 2013. (Figure-1).

 Table 1: Year-wise publications trend of human DNA during 1989-2013.

Year	No. of Publi cations	%	Cum. Publications	Cum. % of Publications
1989	597	3.49	000	000
1990	675	3.95	1272	7.44
1991	712	4.16	1984	11.60
1992	673	3.94	2657	15.54
1993	733	4.29	3390	19.82
1994	736	4.30	4126	24.13
1995	767	4.48	4893	28.61
1996	756	4.42	5649	33.03
1997	734	4.29	6383	37.32
1998	727	4.25	7110	41.57
1999	736	4.30	7846	45.88
2000	681	3.98	8527	49.86
2001	686	4.01	9213	53.87
2002	674	3.94	9887	57.81
2003	673	3.94	10560	61.75
2004	660	3.86	11220	65.61
2005	662	3.87	11882	69.48
2006	619	3.62	12501	73.10
2007	615	3.60	13116	76.69
2008	630	3.68	13746	80.38
2009	688	4.02	14434	84.40
2010	616	3.60	15050	88.00
2011	639	3.74	15689	91.74
2012	720	4.21	16409	95.95
2013	693	4.05	17102	100.00
Total	17102	100.00		

exploration The investigation made on profitability of different nations and landmasses in the region of human DNA. The exploration distributions from different sources has been taken as a measuring stick to gauge the RGR, and Dt for the complete examination vield in Human DNA is introduced in table 2. The RGR and Dt of distribution in the exploration yield of Human DNA at worldwide writing during the examination time frame are appeared in Table 2. It is seen that the least RGR was 0.04 found in 2008, 2010 2012, and 2014 RGR rose to 0.75 in 1990 and the normal mean estimation of RGR was 0.15. It could be deducted from the conversation over that Dt demonstrated an expanding pattern showed up from 0.95 to 17.33 and a diminished tend showed up as 13.86



Fig. 1: Year-wise research output of human DNA during 1989-2013.

Year	No. of Publications	Cum.	W1	W2	W1-W2 R (a)	Mean (a) 1-2	Dt	Mean Dt (a) 1-2
1989	597	597		6.39				
1990	675	1272	6.39	7.14	0.75		0.92	
1991	712	1984	7.14	7.59	0.45		1.54	
1992	673	2657	7.59	7.88	0.29		2.39	
1993	733	3390	7.88	8.12	0.24	0.43	2.89	1.94
1994	736	4126	8.12	8.32	0.2		3.46	
1995	767	4893	8.32	8.49	0.17		4.08	
1996	756	5649	8.49	8.63	0.14		4.95	
1997	734	6383	8.63	8.76	0.13		5.33	
1998	727	7110	8.76	8.86	0.1	0.15	6.93	4.95
1999	736	7846	8.86	8.96	0.1		6.93	
2000	681	8527	8.96	9.05	0.09		7.70	
2001	686	9213	9.05	9.12	0.07		9.90	
2002	674	9887	9.12	9.19	0.07		9.90	
2003	673	10560	9.19	9.26	0.07	0.08	9.90	8.87
2004	660	11220	9.26	9.32	0.06		11.55	
2005	662	11882	9.32	9.38	0.06		11.55	
2006	619	12501	9.38	9.43	0.05		13.86	
2007	615	13116	9.43	9.48	0.05		13.86	
2008	630	13746	9.48	9.52	0.04	0.05	17.33	13.63
2009	688	14434	9.52	9.57	0.05		13.86	
2010	616	15050	9.57	9.61	0.04		17.33	
2011	639	15689	9.61	9.66	0.05		13.86	
2012	720	16409	9.66	9.70	0.04		17.33	
2013	693	17102	9.70	9.74	0.04	0.04	17.32	15.94
Total	17102				3.35	0.15	224.67	9.06

Table 2: RGR and Dt of the research on human DNA during 1989-2013.

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in the year 2011. The mean estimation of Dt was seen as an expanding pattern from 1.57 to 15.25 likewise the normal mean estimation of dt was 8.89. Table 3 shows RGR and Dt for distributions of African researchers were added to Human DNA research yield. The mean Relative Growth Rate (RGR) between 0.08 to 0.15 and the mean for Dt somewhere in the range of 2037 and 9.70. Clearly, the mean for RGR demonstrated an expanding and diminishing pattern saw during the period.

It is likewise noticed that Dt esteem saw as a diminishing and expanding pattern all through the examination time frame, it is a normal mean worth is 6.10. It could be examined that RGR and Dt for distributions of African Scientists mirror an expanding and diminishing pattern during the investigation time frame. Table 4 demonstrates the RGR and Dt for distributions researchers from the Asian nations on human DNA research. Unmistakably the Relative Growth Rate was seeing that fluctuating pattern in over the time of study. The Relative Growth Rate is 0.64 in 1990 and 0.06 in 2013. The Doubling time (Dt) development pattern showed up from 1.08 in 1990 it ascended to 11.55 in 2014. A normal mean of RGR and Dt were 0.13 and 7.24 separately. It could be seen that RGR and Dt are seen as an expanding and diminishing pattern all through the investigation time frame.

It is seen from table 5, the RGR and Dt for distributions of human DNA contributed among the European Scientists. Plainly the Relative Growth Rate was seeing that fluctuating pattern run somewhere in the range of 0.04 and 0.28 in over the time of study. The Doubling time (Dt)

Year	No. of Publications	Cum.	W1	W2	W1-W2 R (a)	Mean (a) 1-2	Dt	Mean dt (a) 1-2
1989	7	7		1.94	0		0.00	
1990	0	7	1.94	1.94	0.00		0.00	
1991	3	10	1.94	2.30	0.36		1.93	
1992	1	11	2.30	2.39	0.09		7.70	
1993	4	15	2.39	2.70	0.31	0.15	2.24	2.37
1994	1	16	2.70	2.77	0.07		9.90	
1995	3	19	2.77	2.94	0.17		4.08	
1996	6	25	2.94	3.21	0.27		2.57	
1997	2	27	3.21	3.29	0.08		8.66	
1998	0	27	3.29	3.29	0.00	0.12	0.00	5.04
1999	4	31	3.29	3.43	0.14		4.95	
2000	6	37	3.43	3.61	0.18		3.85	
2001	6	43	3.61	3.76	0.15		4.62	
2002	6	49	3.76	3.89	0.13		5.33	
2003	3	52	3.89	3.95	0.06	0.13	11.55	6.06
2004	5	57	3.95	4.04	0.09		7.70	
2005	5	62	4.04	4.12	0.08		8.66	
2006	6	68	4.12	4.21	0.09		7.70	
2007	6	74	4.21	4.30	0.09		7.70	
2008	11	85	4.30	4.44	0.14	0.14	4.95	7.34
2009	8	93	4.44	4.53	0.09		7.70	
2010	6	99	4.53	4.59	0.06		11.55	
2011	9	108	4.59	4.68	0.09		7.70	
2012	6	114	4.68	4.73	0.05		13.86	
2013	10	124	4.73	4.82	0.09	0.08	7.70	9.70
Total	124				2.88	0.12	152.6	6.10

Table 3: RGR and Dt of the research productivity in African Countries.

Year	No. of Publications	Cum.	W1	W2	W1-W2 R (a)	Mean (a) 1-2	Dt	Mean Dt (a) 1-2
1989	117	117		4.76	0.00		0.00	
1990	106	223	4.76	5.40	0.64		1.08	
1991	115	338	5.40	5.82	0.42		1.65	
1992	96	434	5.82	6.07	0.25		2.77	
1993	132	566	6.07	6.33	0.26	0.31	2.67	1.63
1994	136	702	6.33	6.55	0.22		3.15	
1995	123	825	6.55	6.71	0.16		4.33	
1996	138	963	6.71	6.87	0.16		4.33	
1997	159	1122	6.87	7.02	0.15		4.62	
1998	145	1267	7.02	7.14	0.12	0.16	5.77	4.44
1999	163	1430	7.14	7.26	0.12		5.77	
2000	146	1576	7.26	7.36	0.10		6.93	
2001	146	1722	7.36	7.45	0.09		7.70	
2002	143	1865	7.45	7.53	0.08		8.66	
2003	107	1972	7.53	7.58	0.05	0.09	13.86	8.59
2004	136	2108	7.58	7.65	0.07		9.90	
2005	173	2281	7.65	7.73	0.08		8.66	
2006	166	2447	7.73	7.80	0.07		9.90	
2007	154	2601	7.80	7.86	0.06		11.55	
2008	192	2793	7.86	7.93	0.07	0.07	9.90	9.98
2009	174	2967	7.93	7.99	0.06		11.55	
2010	183	3150	7.99	8.05	0.06		11.55	
2011	187	3337	8.05	8.11	0.06		11.55	
2012	216	3553	8.11	8.17	0.06		11.55	
2013	214	3767	8.17	8.23	0.06	0.06	11.55	11.55
Total	3767				3.47	0.13	180.95	7.24

Table 4: RGR and Dt of the publications in Asian countries.

showed up the fluctuating pattern during the period. Further, A normal methods for RGR and Dt were 0.14 and 8.16 separately. It could be deducted from conversation over that Relative Growth Rate is demonstrated a fluctuating pattern in over the time of study. Multiplying Time has appeared during the investigation time frame an expanding and diminishing pattern all through examination period.

Conclusion

The research has been discussed about the exploration pattern on the Publications of Human DNA research from 1989 to 2013. The hunt string was utilized 'Human DNA' in the article title search, information go from 1989 to 2013, the applicable information has gathered from just two Subject Areas are in the Sci-Verse Scopus database;

these are "Life Sciences", and "Wellbeing Sciences". Further, the "Existence Sciences" are Covered Source Titles in Agricultural and Biological Sciences, Biochemistry, Genetics, and Molecular Biology, Immunology and Microbiology, Neuroscience, Pharmacology, Toxicology and Pharmaceutics, and Multidisciplinary. The "Wellbeing Sciences" are Covered Source Titles in Medicine, Nursing, Veterinary, Dentistry, Health Professions, and Multidisciplinary. This investigation covers the examination of exploration papers distributed in a quarter-century from 1989-2013. It is discovered that the most noteworthy efficiency is recorded in 1995 with 767 papers (4.48% of the all-out papers in a quarter-century). The mean Relative Growth Rate (RGR) between 0.08 to 0.15 and the mean for Dt from 2037 to 9.70. The mean for RGR appeared as an expanding and diminishing pattern saw during the period. The Relative Growth Rate was seeing that

Year	No. of Publications	Cum.	W1	W2	W1-W2 R (a)	Mean (a) 1-2	Dt.	Mean Dt (a) 1-2
1989	182	182		5.20	0.00		0.00	
1990	204	386	5.20	5.95	0.75		0.92	
1991	205	591	5.95	6.38	0.43		1.61	
1992	209	800	6.38	6.68	0.30		2.31	
1993	263	1063	6.68	6.96	0.28	0.35	2.48	1.46
1994	265	1328	6.96	7.19	0.23		3.01	
1995	292	1620	7.19	7.39	0.20		3.47	
1996	317	1937	7.39	7.56	0.17		4.08	
1997	301	2238	7.56	7.71	0.15		4.62	
1998	315	2553	7.71	7.84	0.13	0.18	5.33	4.10
1999	350	2903	7.84	7.97	0.13		5.33	
2000	252	3155	7.97	8.05	0.08		8.66	
2001	316	3471	8.05	8.15	0.10		6.93	
2002	310	3781	8.15	8.23	0.08		8.66	
2003	264	4045	8.23	8.30	0.07	0.09	9.90	7.90
2004	322	4367	8.30	8.38	0.08		8.66	
2005	300	4667	8.38	8.44	0.06		11.55	
2006	283	4950	8.44	8.50	0.06		11.55	
2007	284	5234	8.50	8.56	0.06		11.55	
2008	273	5507	8.56	8.61	0.05	0.06	13.86	11.43
2009	281	5788	8.61	8.66	0.05		13.86	
2010	248	6036	8.66	8.70	0.04		17.33	
2011	265	6301	8.70	8.74	0.04		17.32	
2012	263	6564	8.74	8.79	0.05		14.14	
2013	291	6855	8.79	8.83	0.04	0.04	16.90	15.91
Total	6855				3.63	0.14	204.03	8.16

Table 5: RGR and Dt of the distributions in European Countries.

fluctuating patterns run somewhere in the range of 0.04 and 0.28 in all through the investigation.

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Usage and Preferences of Print and Electronic Resources among Undergraduate Students in Indira Gandhi Krishi Vishwavidyalaya, Raipur: A Study

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How to cite this article:

Rekhraj Sahu, Brajesh Tiwari/Usage and Preferences of Print and Electronic Resources among Undergraduate Students in Indira Gandhi Krishi Vishwavidyalaya, Raipur: A Study/Indian J Lib Inf Sci 2022;16(1):23–28.

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E-mail: rekhrajsahu@gmail.com Received on: 31.01.2022 Accepted on: 26.02.2022

Abstract

In this study, the usage and preference of print and electronic resources have been checked among the undergraduate students of Indira Gandhi Krishi Vishwavidyalaya. The study investigated whether the availability of Electronic Resources discourages the use of printed resources, the preference of type of document formats preferred while using Electronic Information Resources, level of usage of Print library resources. The result shows that 464 (68.04%) UG students prefer print and electronic resources both for their purposes and do not prefer to give up printed resources.

Keywords: Print and Electronic Resources; Use of Electronic Resources; Undergraduate students; Indira Gandhi Krishi Vishwavidyalaya.

Introduction

ICT means Information and Communication Technology that has transformed the traditional resources into modern resources in every field of education system. The library is part of the soul of any education system and has embraced a new digital environment. Today, the Agricultural educational library has established itself as a mixed environment and provides library resources and services to their educational community from their digital devices.

Without reading resources you cannot think of a library. From the time immemorial, there have been resources based entirely on print and manuscripts within the library. But now, the resource environment has evolved into an electronic form and arrival such as e-book, e-journal, e-database and multimedia-based multimedia services. This is a journey from the traditional look of library resources to library having digital and electronic resources. For many reasons educational libraries have transformed their traditional appearance into modern libraries that rely on electronic resources

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and resources. The user community is considered today as techno savvy. They prefer online-based resources that are easily accessible on their hand or desktop. This evolving need for user education has had an impact on mainstream libraries and that is why library organizations have moved to an electronic-based library.

Indira Gandhi Krishi Vishwavidyalaya, Raipur regularly subscribing a good number of electronic resources for their user communities and library encourages their students and staff to utilize these resources for the maximum utilization of the subscribed resources through workshops, training programs, orientation and information literacy classes.

Review of Literature

Kumar, K et al (2021) reported in "A Comparative Study of Electronic and Print Resources among Library Users". In the study, the researcher used Google Forms for data collection and found that users prefer to use print resources more and emphasized on updating the library facilities. The electronic services received positive feedback. Their use saves time, with both print and electronic processing satisfied level most of the print resources were satisfied.

Mohan, M. & Devi, M. (2021) reported in "Use of Print and Electronic Resources among Graduate Students in the Teaching Departments of the University of Kerala, Thiruvananthpuram". The results of the study show that most students do not know about all library activities. Most of the respondents do not know the library and all its functions. Students suggested that university and departmental libraries should provide awareness programs, conferences, workshops.

Jerome Idiegbeyan-Ose et al. (2019) described e resources compared to printers. Electronic library resources have special features that make them attractive to library users and clerks. Access to and use of the same information by multiple users is a major factor that separates electronic resources from print. Both printing and electronic resources must be acquired, edited and stored in libraries. The library is a strategic place in any educational community.

All the resources needed for teaching, learning and research are accessed, processed, stored and distributed through the library. It is generally thought that the advent of electronic services has led to the emergence of material in print format. Differences have been reported in the use of these resources among library users.

Bhat N.A. and Ganaib, S.A. (2018) reported in It has been found that North Indian library users prefer to use information resources in almost all textbooks and electronics. There are studies that have found print preferences in addition to electronic sources (EIRs). E resources provide users with access to and use of information in a variety of ways, such as online, offline or both. Other findings may include previous work in this article: "easy to search and find', 'quick access' and 'timing' are considered the most influential reasons users prefer to use e-tools in addition to their print counterparts".

About Indira Gandhi Krishi Vishwavidyalaya, Raipur

The Indira Gandhi Krishi Vishwavidyalaya is the only university of Agriculture and allied subjects in Chhattisgarh where 33 Constituent colleges and 15 private colleges offering UG, PG and Ph.D. in various fields related to agriculture, agriculture and agricultural engineering. Education, Research and Extension are major integrated activities in agriculture, veterinary, dairy and agricultural engineering with students. Indira Gandhi Krishi Vishwavidyalaya Library is one of India's richest libraries in the field of Agricultural, Horticultural and Allied Sciences, providing access to a large number of print and electronic information services to cater for the needs of students, researchers and members of the faculty. IGKV libraries are subscribing a good number of electronic and print resources for their users.

Statement of the problem

Today e-resources in libraries and information centres are constantly evolving. Previously, the library's collections largely constituted of print resources, but over time the adoption of electronic resources started. The preference and use of electronic resources along with print resources by the users is increasing continuously. The need for electronic resources is being felt by the students of Indira Gandhi Krishi Vishwavidyalaya and for these reasons this study is being done towards print and electronic resources.

Objectives of the study

- To investigate whether the availability of Electronic Resources discourages the use of printed resources.
- To identify the preference of type of document formats preferred while using Electronic Information Resources.
- To find out the level of usage of Printed library resources.

Methodology and Limitation of the Study

In this study a sample of 682 UG students of B.Sc. (Agriculture) course among the selected colleges constituent to Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) were selected by random sampling. The Required data is collected through a well-designed questionnaire (via Google forms) as a data collection tool. The population of this study was limited to Undergraduate Students of B.Sc. (Agriculture) for academic session 2019-20 among selected constituent colleges of Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.).

Data Analysis and Interpretation

Table 1: Do you use electronic resources?

Do you use Electronic Resources?	Respondent	Percentage
Yes	682	100
No	0	0
Total	682	100

Source: Primary Data

Table 1 deal with respondent's use of electronic resources out of 682 respondent, 682 (100%) use electronic resources. It is concluded that most students of Constituent Colleges of Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) use electronic resources under the study.

Table 2: The version of resources do you prefer to use.

The version of resources do you prefer to use	Respondent	Percentage
Electronic	127	18.62
Print	91	13.34
Both Print and Electronic	464	68.04
Total	682	100

Source: Primary Data



In this table and graph shown an attempt was made to know of the print, electronic or both print and electronic resources are preferred by the undergraduate students. In this study it was found that Out of 682 respondent, 127 (18.62%) prefers to use electronic resources, 91 (13.34%) prefers print and 464 (68.04%) prefers print and electronic resources both. It is concluded that most students of constituent Colleges of IGKV, Raipur are preferring print and electronic resources both under this study.

Table 3: which one of the following version of resources do you prefer to use?

Purpose of Using	Print	%	Electronic	%	Total
An available library resources are suitable for your objectives	424	62.17	258	37.83	682 (100%)
The collection of library resources are frequently updated and similar useful information	307	45.01	375	54.99	682 (100%)
Are the library resources in your library is arranged properly and convenient	414	60.70	268	39.30	682 (100%)
Library resources easily searchable	333	48.83	349	51.17	682 (100%)

Print Electronic



Indian Journal of Library and Information Science / Volume 16 Number 1 / January-April 2022

The questions were asked on the basis of various parameters given by the student including the availability of library resources according to their purpose, accuracy and quality of information, easily availability of access to resources and ways to acquire resources. The result has come out as follows available library resources are suitable for your objectives in this purpose 424 (62.17%) Students in print resources and 258 (37.83%) students in electronic resources are using the resources; the collection of library resources is frequently updated and similar useful information in this purpose 307 (45.01%) Students in print resources are using the resources.

Are the library resources in your library are arranged properly and conveniently for this purpose 414 (60.70%) Students in print resources and 268 (39.30%) students in electronic resources are using the resources and Library resources are easily searchable for this purpose 333 (48.83%) Students in print resources and 349 (51.17%) students in electronic resources are using the resources are using the resources. In this study, we can say that print resources are suitable objective-based resources and properly arranged and convenient, and frequently updated, useful information and easily searchable students prefer to use electronic resources.

Table 4: To what extent do you normally use electronicresources and print resources through library?

Resources used though library	Respondent	Percentage
I mainly use electronic resources	166	24.34
I mainly use printed resources	65	9.53
I use electronic resources and printed Resources Equally	243	35.63
I use electronic resources exclusively, or almost exclusively	146	21.40
I use printed resources exclusively, or almost exclusively	62	9.10
Total	697	100



Fig. 1: Resources used though library.

Table 4 and figure deal with do they normally use electronic resources and printed resources through Library. Out of 682 respondent, 166 (24.34%) mainly use electronic resources, 65 (9.53%) mainly use printed resources, 243 (35.63%) use electronic resources and printed Resources Equally, 143 (21.40%) use electronic resources exclusively, or almost exclusively and 62 (9.10%) use printed resources exclusively, or almost exclusively. It is concluded that most students of Constituent Colleges of Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) use electronic resources and printed resources equally under the study.

 Table 5: The environment of electronic resources is more open then printed resources?

The environment of electronic resources is more open then printed resources?	Respondent	Percentage
Yes	550	80.65
No	132	19.35
Total	682	100

Source: Primary Data

Table 5 deals with respondent opinion on environment of electronic resources is more open then printed resources. Out of 682 respondent, 550 (80.65%) think environment of electronic resources is more open then printed resources and 132 (19.35%) don't think environment of electronic resources is more open then printed resources.

Table 6: Electronic resources are most useful for the libraries?

Electronic resources are most useful for the libraries?	Respondent	Percentage
Yes	616	90.32
No	66	9.68
Total	682	100

Source: Primary Data

Table 6 deal with respondent opinion on electronic resources is more useful for the libraries. Out of 682 respondent, 616 (90.32%) think electronic resources are more useful for the libraries and 66 (9.68%) don't think electronic resources are more useful for the libraries.

Table 7: The users get more benefit from electronic resources and services than the hard copy of books and journals?

The users get more benefit from electronic resources and services than the hard copy of books and journals?	Respondent	Percentage
Yes	497	72.87
No	185	27.13
Total	682	100

Source: Primary Data

Table 7 deals with the users get more benefit from electronic resources and services than the hard copy of books and journals. Out of 682 respondent, 497 (72.87%) the users get more benefit from electronic resources and services than the hard copy of books and journals and 185 (27.13%) the users don't get more benefit from electronic resources and services than the hard copy of books and journals.

Table 8: The e-resources made an impact on Print resources?

Do you think the e-resources made an impact on Print resources?	Respondent	Percentage
Yes	524	76.83
No	74	10.85
No Change	84	12.32
Total	682	100

Source: Primary Data

Table 8 deals with respondent think the e-resources made an impact on Print resource's accessibility and usability. Out of 682 respondent, 524 (76.83%) think the e-resources made an impact on Print resource's, 74 (10.85%) don't think the e-resources made an impact on Print resources and 84 (12.32%) think no change.

Table 9: Level of usage of print resource.

Level of usage of print resource	Respondent	Percentage
Increased	266	39.00
Decreased	288	42.23
No Change	128	18.77
Total	682	100

Source: Primary Data





Table 9 and Figure above deals with the level of usage of print resource versus electronic resources deal with the level of usage of print resource, ask questions from the students do you think electronic resources affect the print resources Out of 682 respondent, 266 (39.00%) increased the level of usage of print resource, 288 (42.23%) decreased the level of usage of print resource and 128 (18.77%) think no change.

Findings of the study

- 100% students are using Library's electronic resources.
- 68.04% students prefer both print and electronic resources for their purposes.
- Students are using print and electronic resources in terms of the availability, purpose, objectives, search ability and frequent updated information.
- 35.63% students of Constituent Colleges of Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) use electronic resources and printed resources equally.
- 80.65% students think environment of electronic resources is more open then printed resources.
- 90.32% students think electronic resources are more useful for the libraries.
- 72.87% students get more benefit from electronic resources and services than the hard copy of books and journals.
- 79.23% students think electronic resources affect the usage of print resources.

Conclusion

The availability of print and electronic resources in the library and the use of these resources by the undergraduate students of constituent colleges of IGKV, Raipur are important so that the needs and requirement of the students can be easily fulfilled. It is clearly indicated from this study that print and electronic resources are used equally by the students to fulfil their needs and the library professionals should keep updating both types of resources regularly in the library collection and make students aware of it from time to time so that the usage of both print and electronic resources can be maximized, satisfying the information need and requirements of the users of the library.

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Library Security Issues and Challenges: A Study on Gitam Deemed to be University Library, Telangana

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How to cite this article:

G Krishna Reddy, J Vivekavardhan/Library Security Issues and Challenges: A Study on Gitam Deemed to be University Library, Telangana/Indian J Lib Inf Sci 2022; 16(1): 29–36.

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Received on: 08.12.2021 Accepted on: 17.01.2022

Abstract

The study explores library security issues and challenges at of selected Gitam deemed to be University in Telangana State. 450 Questionnaires distributed to the Students and Research Scholars of Gitam University. A total number of 428 filled questionnaires was received. The study reveals that noise-making through using electronic gadgets in the library was, 78 (22.03%), library materials theft and mutilation 12 (3.39%) making the books not available to other users by changing the shelving location was 13 (3.67%). cybercrimes in library 18 (5.08%), Violating the laws of copyright was 19 (5.37%).

The study also reveals that lack of awareness on library ethics, 98 (23.96 %); non availability of multiple copies of the books force the users to steal the books 61 (14.91%) Ignorance on library crime, 45 (11%); inappropriate security system to track accusers, 17 (4.16%); unaffordable prices of the books was 43 (10.51%) findings of the study.

Keywords: Library Securities; Library Rules; Library Crime; Library Challenges.

Introduction

Libraries are established to facilitate the readers with the information needs of different categories of patrons, covering different aspects of life, such as academics, political, economic, social, and cultural (Alokun, 2003). The effectiveness of an academic library is measured on the basis of how the library resources are accessible for teaching and learning community and how the library premises are secured for effective service by library staff. As we aware, all the Libraries across the world are encountered with security issues and challenges. Security challenges commonly reported in the libraries including library material theft and mutilation, and destruction of library building, equipment, and stock. In such chaotic atmosphere of where life is under risk and materials are prone to one crime or another, it will be tough for a library to fulfil its responsibilities and assist the institution in achieving goals.

Library Services in India

The traditional library services like classification and cataloguing was provided before the invention of Internet in Academic Libraries. As per the changing needs of the users, user demands, more specific and pinpointed content is providing in the University Libraries. The modern Digital Libraries and University Library services are mainly by Internet access through the Library's workstations. Internet had major impact on how people find and access information, rising popularity of e-books, access to online and digital documents, maintaining digital repositories within and outside the campus. The university library services through Social Networking tools, web 4.0 tools, wikis, blogs, RSS feeds etc. are proving to the library users to meet the user demands. There is a need of library security system in the Libraries due to preservation of traditional information for future generations and rapid increase of crime in libraries.

History & Background of Gitam Deemed To Be University

Gandhi Institute of Technology and Management, popularly known as GITAM, is a private Deemed to be university located off-campus in Hyderabad, Telangana, India. It is one of three campuses of Gandhi Institute of Technology and Management. The campus admitted its first batch of students in 2009, presently 7000 plus students, 500 plus academic staff and 400 plus supporting staff and is committed to enhancing the potential of human resources and enriching academic performance and research innovation as well as expanding the frontiers of knowledge through interactive and collaborative pedagogy. The campus has six schools -School of Technology, Hyderabad Business School, School of Pharmacy, School of Architecture, School of Science and School of Humanities, Social Sciences and recently launched school of public policy.

Review of Related literature

Akussah and Bentil (2010) Study explores about University of Cape Coast, Ghana library. The methods used for the study are questionnaire, Interview. The study recommends orientation and awareness programs to be conducted for all the patrons regarding the library security. Chaney and McDougall 1992. Main motto is to identify and analyse the most important factors that should be considered to take decisions about the adequate ways to give access to information.

Eyo (2008)The study reveals that how the patrons are changing the shelving in the institution library of Cross River State, Nigeria. Stratified random sampling used for data analysis, the study suggest that regular orientation, giving awareness services to the patrons is required. Omotayo and Ajayi (2005/2006) reported in their studies that the most common library crime by the patrons is hiding the demanded books in other shelves where other users can't find that book in the right

time. According to Senyah (2004) in his study on some Kwame Nkrumah University of Science and Technology students, Ghana, reported that library staff and students were involved in stealing the library materials. He is also observed that insufficient number of text books and journals leads to book theft. Lincoln & Limolu (1986) opined that library crime is increasing rapidly in all sections of the society. Such criminal activities severely affect every library and information centre.

The review of literature on library crimes such as book theft, defacement of the books, verbal and physical abusing of the staff harassment, terrifying and hacking the library databases was found.

Objectives of the Study

- To find out the Challenges and issues in library security in Gitam Deemed to be University, Library.
- To find out the Services available in Gitam Deemed to be University, Library.
- To find out the level of utilization of Library Resources Gitam Deemed to be University, Library.
- To find out the satisfaction level of the students and services provided by the Library.

Need of the study

The Review of Related Literature reveals that there are no studies on University Library Security Issues in Telangana State. So far, no one has conducted research; however, there is a need to investigate the state of the art Library Security issues as well as awareness and usage of Library Resources among Teachers, Researchers and students in Telangana State.

Scope and limitation of the study

The present study is confined to the students who are studying in Gitam Deemed to be University, Hyderabad. Hence, the study is geographically limited to Hyderabad and empirically limited to Gitam Deemed to be University.

Methodology

The Methodology used for the study was Descriptive Survey. Two instruments for data collection were used for this study. These are questionnaires and interviews, and a convenient sampling technique was applied. However, the questionnaire was the only major data collection instrument. A total of 428 responses received out of which, 450 questionnaires were filled in and considered for analysis. Data analyzed as tables using percentage, chi-square test using SPSS.

Data Analysis

Service Facilities at KRC Library

Gitam Deemed to be University Hyderabad campus KRC provide decent library facilities and services, including Current awareness service (CAS), Selective dissemination Information (SDI), Photocopying, CD Copying, Inter-Library Loan, Lending service, Reference service, Internet browsing, OPAC, Book Bank and also provide user awareness programmes, online lecture, Information Literacy Programmes. Books Lending service is the main service of the GITAM Deemed to be University library.

Photo copying	User awareness Programmes
CD copying	Information Literacy
Inter library loan facility	Print media clippings
Lending service	Membership
Reference service	OPAC/WEB-OPAC
Internet Browsing facility	Virtual lectures
Current Awareness Service (CAS)	Department libraries
Selective Dissemination of Information (SDI)	Book bank facility

Distribution of respondents KRC Library

The questionnaire was distributed to respondents in two categories wise they are male and female. The majority, 51.64%, of respondents are male, 48.36% of respondents are female.

Frequency of Use of KRC Library

Frequency of use of the Library, majority 31.78% of respondents visiting Library once in a week, followed by 26.17% of respondents twice a week, 14.25% respondents daily, 4.91% of respondents

monthly, occasionally 11.45% of respondents and fortnightly was found.

Table 2: Distribution of respondentsKRC Library.

Respondents/Users	Frequency	Percent (%)
Male	221	51.64
Female	207	48.36
total	428	100

Table 3: Frequency of Visiting KRC Library.

Frequency of Visiting KRC	No of Respondents/Users	Percent (%)
Daily	61	14.25
Twice a week	112	26.17
Once in a week	136	31.78
Fortnightly	49	11.45
monthly	21	4.91
Occasionally	49	11.45
Total	428	100

Purpose of visiting KRC Library

Table 4 shows the purpose of visiting Library, and it was found that majority 179 (41.82%) of respondents, visited Library for research purposes, 91 (21.26%) of respondents self-knowledge, which are followed by 22 (5.14%) of respondents recreation 136 (31.78%) of respondents visiting library others such as observation library collection, for relax etc.,

Table 4: Purpose of visiting KR	CLibrary.
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Purpose	No of Respondents/Users	Percent (%)
Research	179	41.82
Self-knowledge	91	21.26
Recreation	22	5.14
Others	136	31.78
Total	428	100

Library services assessed by Students & Research scholars.

Table 5 and figure 3 shows Library and



Fig. 1: Showing Purpose of Visiting KRC Library.

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information services used by students and research scholars; it was observed that e majority 53.50 % of respondents internet and digital Library, 30.14% of respondents journals and periodicals, which are followed by 14.25% of respondents reference service, 4.91 % of respondents circulation service, 2.12% of respondents photocopying services only.

Table 5: KRC Library services assessed by Students &Research scholars.

Library Services	No of Respondents	Percent(%)
Circulation	21	4.91
Internet & digital library	229	53.50
Reference service	61	14.25
Journal & Periodical service	129	30.14
Photocopying service	9	2.12
Total	428	100

Effectiveness of KRC Library services

Here table 6, figure 3, reveals the effectiveness of Library and information services, majority 65.65% of respondents opined very effective, 109 (25.47%) of respondents opined effective, followed by 27 (6.31%) of respondents opined ineffective, finally 7 (1.64%) of respondents very ineffective.

Table 6: Effectiveness of Library services.

Services	No of Respondents	Percent (%)
Very effective	281	65.65
effective	109	25.47
Ineffective	27	6.31
Very ineffective	7	1.64
None of the above	4	0.93
Total	428	100

Facilities provided by KRC Library are sufficient. Here, table 7 and figure 4 reveals whether the Facilities provided by Library are sufficient or not. It was observed that the majority, 269(62.85%) of respondents, strongly agreed, 111(25.93%) of respondents agreed for the same. 27(6.31%) of respondents strongly disagree and 16(3.74%) respondents disagree, and finally, 5(1.17%) of respondents neither agree nor disagree the same.

Table 7: Facilities provided by KRC Libraryare sufficient.

Response	No of Respondents	Per cent (%)
Strongly agree	269	62.85
agree	111	25.93
Strongly disagree	27	6.31
disagree	16	3.74
neither agree nor disagree	5	1.17
Total	428	100

Types of KRC Library Crimes

Table 8 was about types of security issues confronting in the Gitam Deemed to be university library. Respondents were asked about the types of vandalism activities committed in their library. Use of Electronic Gadgets in the Library, 78 (22.03%), Noise making in the Library, 38 (10.73), Refusal to pay the overdue fine were 57(16.10), Library Materials Theft and Mutilation, 12 (3.39%), respectively; Making the books not available to other users by changing the Shelving Location, 13 (3.67%); Delay in returning borrowed library materials, 31 (81.76%); Making noise and shouting in the Library, 38 (10.73%); and, Vandalism9 (2.54%) constitute the highest crimes committed in the libraries.

The least types of crimes recorded are Hacking of computed information, 5 (1.41%) and Pirating VHS, CD, DVD, respectively 17 (4.80%), Clashes in the Library2 (0.56%), Reluctant for renewing



Fig. 3: Showing Effectiveness of Library services KRC Library.



Fig. 4: Showing Facilities Provided by Library are sufficient KRC Library.

library registration 21 (5.93%), Using the Internet to commit cybercrimes 18 (5.08%), Violating the Laws of copyright 19 (5.37%) was found.

Table 8: Types of KRC Library Cr.	imes.
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Types of Library Crimes	No of	Percent
	Respondents	(%)
Library Materials Theft and mutilation	12	3.39
Destruction of Library materials	9	2.54
Defacement of library materials	27	7.63
Pirating VHS, CD, DVD	17	4.80
Unwilling to pay overdue fine	57	16.10
Delay in returning borrowed library materials	31	8.76
Physical and Verbal assault of library staff	7	1.98
Making the books not available to other users by changing the Shelving Location	13	3.67
Making noise and shouting in the Library	38	10.73
Using an Electronic Gadgets in the Library	78	22.03
Clashes in the Library	2	0.56
Reluctantfor renewing library registration	21	5.93
Cybercrimes in Library	18	5.08
Violating the Laws of copyright	19	5.37
Hacking	5	1.41

Accusers of KRC Library Crimes

It was observed from table-9 On the Accusers of library crimes, respondents were asked about the category of users who were mostly involved in library crime; students were at first place with 93 (51.67%), External users 56 (31.11) while non-

teaching staff and library security staff with 17(9.44%), teaching faculty 11(6.11) and Library security staff (porter) 4(3.8%) had the least accusers.

Table 9: Accusers of KRC Library Crimes.

Accusers	No of Respondents	Percent %
Students	93	51.67
Teaching faculty	11	6.11
Non-teachingstaff	17	9.44
External users	56	31.11
Library security	3	1.67

Organisations Responsible for Punishment of accusers.

Table 10 represents that university's organisation is responsible for enquiring and punishing accusers of library crimes; 47 (87.04%) used the university library disciplinary committee and 7 (12.96%) used the university disciplinary committee.

 Table 10: Organisations Responsible for Punishment of accusers.

Organisation Responsible for Punishment	No of Respondents	Percent%
University library's disciplinary committee	47	87.04
University disciplinary committee	7	12.96

Disciplinary Actions for Accusers of KRC Library Crimes

As shown in the Table 11 on the disciplinary action taken against accusers perpetrating librarycrime, respondents were asked about the types of disciplinary actions for library crimes; suspension from the Library was 47 (34.56%); removal of the right to borrow the books, 67 (49.26%); suspension from the university 14(10.29; rustication from the university, 7(5.15%) and termination of staff member, 1(0.74%).

Table 11: Disciplinary Actions for Accusers of KRC Library Crimes.

Disciplinary Action	No. of Respondents	Percent %
Suspension from the Library	47	34.56
Suspension from the university	14	10.29
Removal of the right to borrow the Books	67	49.26
Rustication from the university	7	5.15
Termination of the staff member	1	0.74

Security Measures in GITAM Deemed to be University Library

According to Table 12 respondents, security measures were put in place by their libraries to ensure the safety and the security of the library resources. Recruitment of library security staff 57 (37.2 %) was rated highest among security measures put in place by the Gitam university library. This was followed by Library security committee 46 (30.07%); Patrons and staff security outreach programs for library staff and users had 12 (7.84%) responses; Installation of CC TV Cameras15(9.8%); Policy for library security, 13(8.0); Education and training to the staff on safety and security issues10 (6.54%).

Table 12: Security Measures in GITAM Deemed to beUniversity Library.

Security Measures	No of Respondents	Percent %
Library security committee	46	30.07
Recruitment of library security staff	57	37.25
Installation of CCTV Cameras	15	9.80
Policy for Library Security	13	8.50
Patrons and staff security outreach programs	12	7.84
Education and training to the staff on safety and security issues	10	6.54

Reasons for Library Crimes and Material Abuse in Gitam Deemed to be University Library

Table 13 represents opinions of respondents on the reasons for library crimes and material abuse in the Gitam Deemed to be university library, according to the respondents: lack of awareness on library ethics by users, 98 (23.96 %); In most cases, non availability of multiple copies of the books, that

are prone to stealing and mutilation 61(14.91%) ignorance of library crime, 45(11%); Inappropriate security system to track accusers, 17(4.16%); Poor economic background condition of the patrons is zero and lack of inadequate punishment to serve as a deterrent to others, 11(2.69%) were the major reasons for library crimes in this study. The least commonly stated reason for library crime is the most accusers are evil minded, 12(2.93%). unaffordable prices of the bookslet them towards library crime 43 (10.51%).

Table 13: Reasons for Library Crimes and Material Abuse inGitam Deemed to be University Library.

Reasons for Library Crime	No of Respondents	Percent %
Lack of awareness on library ethics	98	23.96
Non availability of quality Reprographic facilities	56	13.69
Ignorance on Library Crime	45	11.00
Deliberate and malicious damage by users	27	6.60
Inappropriate security system to track accusers	17	4.16
Inadequate punishment to serve as a deterrent to others	11	2.69
Non availability of multiple copies of the Books	61	14.91
Lack of awareness to the library staff about the consequences of the crime on library Services	39	9.54
Most accusers are evil-minded	12	2.93
unaffordable prices of the books	43	10.51
Poor Economic Background of the patrons	0	0.00

Analysis of data collected through mailed questionnaires offline and online survey monkey platform interviews were conducted with librarians as well as library authorities working in the GITAM Deemed to be University library. The study revealed that the GITAM Deemed to be university library is facing many security challenges. According to the responses from interviewees, using electronic gadgets like cell phones, in the library hall is creating disturbance to the patrons with the continuous noise, The crime in the next place is theft and mutilation of library materials.

The study also found that that besides other library users, students were also the culprits that students were the most frequent accusers who involved in library crimes. Recruitment of inefficient security personal is leading to inefficient library security and lack of regular training on library crimes for the security personnel.

Conclusion

The GITAM Deemed to be University library provides quality Library and information services. The majority of users strongly believed that the facilities provided by the KRC GITAM library are very effective & informative. GITAM Deemed to be University library will face in future also many security challenges if they open their doors to the patrons from different backgrounds. Until and unless some necessary actions are taken, the theft and mutilation of library resources will not be checked. The following recommendations to be followed to meagre the library crime.

Recommendations

Installation of more CCTV cameras can reduce the library crime.

Installation of RFID can reduce the library crime even though it is expensive.

Frequent training to library staff is required on latest security trends.

Purchasing of multiple copies of required materials/books which is in high demand.

Regular awareness programs to be conducted to the patrons on the library ethics.

The study also recommends to provide the qualityof-service for library users.

Acknowledgments

The authors would like to thank, Prof.Laxman Rao, Prof. Vishwamohan, Prof. S. Sudarshan Rao, Retd. Professors from Department of Library and Information Science, Osmania University for their able guidance, encouragement, constant support and whole-hearted cooperation.

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An Analysis of Open Access E-Newsletters in Library and Information Science

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How to cite this article:

Kaushal Chauhan/An Analysis of Open Access E-Newsletters in Library and Information Science/Indian J Lib Inf Sci 2022;16(1):37-40

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Received on: 12.11.2021 **Accepted on:** 30.11.2021

Abstract

Open Access Electronic Resources are also playing an important role in facilitating access. This study highlights the importance of online open access E-Newsletters with their facilities and features. Last one decade has witnessed a great boom in scholarly E-Information, which in addition to making great impact, has generated enormous debate among researchers and information professionals. The criteria for evaluation of open access E-Newsletters analyzed and list of open access E-Newsletters with their websites and bibliographic details are provided. Author tried to give a detailed introduction and evaluation to Open access online E-Newsletters regarding its scope, coverage, authority, arrangement, treatment, and other features. While doing this exercise, author also tried to bring out some of the significant and useful details of open access online E-Newsletters to evaluate the pattern, scope subject coverage, back files, full text, abstract and to determine type of documents available in these E-Newsletters.

Keywords: E-Resources; E-Newsletters; Open Access E-Resources; Open Access E-Newsletters.

files, full text, abstract etc.

Introduction

A news letter is a tool to share relevant and valuable information with their network of customers and subscribers. The purpose of Newsletters is to give updates in your interested areas. E-Newsletters are part of E-Resources. E-Newsletters are provided to give you direct access to the information in which you are most interested. There are lots of online open access E-Newsletters which are very important in LIS. There are different criteria's for evaluation of open access E-Newsletters. Author tried to give a detailed introduction and evaluation to free online E-Newsletters regarding their scope, authority, arrangement, treatment, subject coverage, back files, full text or abstract etc.

Objectives

• To provide significant and useful details of Open Access online E-Newsletters.

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parameters:

To evaluate the pattern, scope and coverage

in E-Newsletters i.e. subject coverage, back

To determine type of documents available in

Open Access online E-Newsletters of library

- 1. ABAA Newsletter https://www.abaa.org/ about-abaa
- 2. Abbey Newsletter https://cool. culturalheritage.org/byorg/abbey/an/
- 3. Against the grain https://docs.lib.purdue. edu/atg/
- Alawon. The ALA Washington Office Electronic Newsline https://www. abbreviationfinder.org/acronyms/alawon_ american-library-association-washingtonoffice-newsline.html.

- ALCTS Network News https://www.ala. org/alcts/ano/v13/v13n3/ano13n3_nws_ awards.
- ARL: A bimonthly newsletter for library issues and action https://eric. ed.gov/?id=ED461378.
- Biblia's Warrior Librarian Weekly https://archive.org/details/ bibliasguidetowa0000cred.
- 8. Biblio-Tech Review https://www. insidehighered.com/blogs/library-babelfish/bibliotech-review.
- 9. Business and finance division bulletin https://connect.sla.org/bf/resources/ bfbulletin.
- 10. Cataloging and Classification Quarterly https://www.tandfonline.com/toc/ wccq20/current.
- 11. CIT Infobits http://serials.infomotions.com/ infobits/.
- 12. Conserline http://www.loc.gov/acq/conser /consrlin.html.
- FreePinthttp://eprints.rclis.org/24534 /5/126.
- 14. Information today and Tomorrow http://itt. nissat.tripod.com/
- 15. Internet on a Disk https://seltzerbooks.com/ ioad.html
- 16. Internet Resources Newsletter http://www. ariadne.ac.uk/issue/6/irn/
- 17. LC Cataloging Newsline http://www.loc. gov/catdir/lccn/.
- 18. MLS: Marketing Library Services http:// www.infotoday.com/MLS/default.shtml
- 19. NLM Technical Bulletin https://www.nlm. nih.gov/pubs/techbull/back_issues.html
- 20. RLG DigiNews https://www.oclc.org/ research/publications/newsletters/ diginews.html.
- 21. Serials E-News http://eprints.hud.ac.uk/id/ eprint/3001/.
- 22. SPARC Open Access Newsletter or Free Online Scholarship Newsletter https:// community-wealth.org/content/sparc-openaccess-newsletter.
- 23. Sprouts: Working Papers on Information Systems https://aisel.aisnet.org/sprouts_ working_papers/.
- 24. The Wired Librarian's Newsletter http:// publiclibrariesonline.org/category/thewired-library/.

Table 1: Parameters and Coverage.

Parameters	Coverage
Response time	22
Link	8
periodicity	13
Special features	11
Help, Search Engine, Searching	17
Currency, Current Trends	12
Personalization	6
International	0
Peer Reviewed, Refereed, Indexed	1
ISSN	13
Personalization with Search	5
Other Parameters	24



Indexed 1 Personalization6 International 0 Peer reviewed 1 e-17 Personalization with Search 5 Peer Reviewed and Indexed 1 Other Parameters 24

Fig. 1: Distribution of E-Newsletters by Parameter Coverage.

The table and chart shows that out of 24 E-Newsletters Good Response time 22 (90%), Help, Internal Search Engine, Searching 17 (70%), Periodicity 13 (54%), Currency and current trends 12 (50%), Link 8 (33%), Personalized 6 (25%), Search with Personalization 5 (20%), Refereed, Indexed, Peer Reviewed, Peer Reviewed and Indexed having 1 (4%). Rest Parameters have 24 (100%)

Table 2: Free E-Newsletters having maximum parameters60% to 90% above.

E-Newsletters & others E-Resources	No
90% E-Newsletter & Others Covering 36-39 Parameters	1
80% E-Newsletter & Others Covering 32-35 Parameters	6
70% E-Newsletter & Others Covering 28-31 Parameters	11
60% E-Newsletter & Others Covering 24-27 Parameters	6
Total	24



Fig. 2: (E-Newsletters covering Parameters Percentage-wise).

The above table and chart shows that 1 E-Newsletters & Others are covering 90% parameters (36-39 Parameters), 6 E-Newsletters & Others are covering 80% parameters (32-35 Parameters), 11 E-Newsletters & Others are Covering 70% (28-21 Parameters), 6 E- Newsletters & Others are covering 60% (24-27 Parameters).

Findings

This study is confined to Open Access E-Newsletters in India and other countries. Various evaluation methods have been proposed, but this study utilizes some of the useful checklists/criteria for evaluating information found on web. A major similarity found that almost E-Newsletters are concentrating towards digital library initiatives, technological, information service developments and information networking issues contains a wide coverage of local library issues ranging from ongoing research dayto-day news from the work place etc.

Out of several searched E-Newsletters it is found that maximum open access E-Newsletters are available in full text form, free of cost and can be received regularly without missing even a single issue. The most notable finding in the study is that it provides effective communication between user and online Open Access E-Newsletters.

Conclusion

There has been a rapid urge of the user community to get more and more Information Online. The Open Access E-Newsletters are available in accepted standards. One can easily get information for total strength of Open access available online E-Newsletters.

The result of the can be utilized by the Students, Teachers, Researchers, Scholars, Philosophers and all other User Community to fulfill their information needs. In general almost open access E-Newsletters are of mixed quality, which was expected, since all of them belong to not for profit ventures.

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Measuring the Lotkas's Law Applicability on Human DNA

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How to cite this article:

P Murugiah/An Analysis of Open Access E-Newsletters in Library and Information Science/Indian J Lib Inf Sci 2022;16(1):41-52.

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Abstract

The study indicates the Quantum of pages of research publications from 1989 to 2013. The total 115584 pages containing 17102 publications during 1989-2013. The highest number of pages 5198 (4.50%) finds out in 736 publications in 1994. The Doubling time (Dt) also appeared a fluctuating trend between 2.67 in 1990 and 69.3 in the year 1996 and 2000 were found to be an upward and downward trend in the period of study. The first is one volume of articles produced by a specific variable (articles in journals) in different years and thus the extent of the increase and the second one is the volume of growth of literature in different years in relation to the world in productivity. At the first observation, it can be analyzed that data invalidate the Lotka's findings that the proportion of all contributions that make a single contribution is less than 60%.

Keywords: Human DNA; Mapping; Relative Growth Rate and Doubling time; Pages wise; Activity Index and Lotka's Law.

Introduction

Deoxyribonucleic acid (DNA) is the universal blueprint for life on Earth, DNA determines what people look like and how their bodies function. It can cause crippling defects or protect living creatures from the disease. It may even determine when it's time to die (Bank E) 1. Studying human DNA and genetics can help scientists better understand where humans came from as a species. Moreover, human DNA and genetics can be intellectually fascinating, but it also has plenty of practical applications.

From the use of DNA testing in court cases to the discovery of new therapies for genetic diseases, a thorough understanding of the human genome can have important medical, social, and legal impacts. Understanding the genetic basis behind human disease is one of the most important reasons for studying the human genome (Coila B 2013).¹

In the past two decades, very least numbers of studies were published in medical Sciences, consequently this present study helps to know and improve DNA relevant document collect to improve for the library services.

Review of Literature

Li. Q, Jiang.Y, and Zhang. M, (2012)2, analyzed the national contributions in the field of emergency medicine. The study reveals that total numbers of 9775 articles were published in the 13 journals from 2006 to 2010 worldwide. West Europe, North America, and East Asia were the most productive regions. High-income countries published 87.9 of the total articles. The United States published the most number of articles from 2006 to 2010 (46.3), Germany had the highest mean IF (2.27) and mean citations (6.87). Narotsky D, Green PH, Lebwohl B. (2012)3, analyzed CD publication output concerning its degree of diffusion among journals and authors and assessed for an association between economic parameters and output. The study reveals that the number of publications in

CD is increasing, out of proportion to the overall growth of the peer-reviewed medical literature. CD publications are spread throughout a larger number of journals but are more dominated by high-volume authors. Economic factors are associated with national contributions to world literature in CD. Pavlichenkoa.A, and Smirnova. D, (2012)4, examined the socio-demographic profile and clinical manifestations and data of people with mental disorders attending the private psychiatric clinics. The study discusses the social–psychological and neuro-immunological parameters of people with "dangerous" professions.

They use a mathematical method, the authors created a model that can decrease the negative influence of work-related extreme factors. Ugolini D, and et al., (2012)⁵, studied that literature in cerebrovascular and cardiovascular disease rehabilitation: growing numbers, reducing impact factor. The study aims to explore temporal trends, geographic distribution, and socioeconomic determinants of scientific production in the field of cerebrovascular and cardiovascular disease (CCD) rehabilitation.

Buttons Garcia-Jover and Barrigon (1992)6 have conducted a study on bibliometric analysis, of publications of Spanish pharmacologists, references within the journals of the Pharmacology & Pharmacy subfield of the Science Citation Index-CD version from 1984 to 1989. The study reveals that the scientific output of Spanish pharmacologists has been growing at a powerful rate being almost doubled. Ambrosio. A, et al., (1993)⁷, have discussed a co-word analysis of over 70 years of biological safety literature. The database employed in this project is that the Songer Safety Bibliography (SSB) which lists around 17 000 references.

The results show biological safety to be a fragmented field, characterized by the existence of several relatively independent foci of interest, none of which has been ready to structure the sphere into a good network. Haiqi (1994)⁸, has found that bibliometric analysis was examined by the references of the articles in Medicine Chinese Traditional (MCT) searched by the CD-ROM Medline.

The 3006 references of the articles on MCT which were published between 1974 and 1992 in 343 periodicals were the samples for the current study. The result shows that to spot reasonably a hierarchical ranking of periodicals and to gauge objectively a distribution of states where those articles were published and languages within which those articles were written. Herbert. Muller-

Hill (1995)⁹, observed the research performance of 13 research institutes active within the field of biology. The study purpose to count the number of scientific publications and also the number of citations received during five years (1980–1984). Vickers, (1998)¹⁰, conducted a Bibliometric analysis of the registry of randomized trials of the Cochrane Collaboration field in medicine.

The aim of analyzing, the extent to which they're indexed in Medline, the journals during which they're published, dates of publication, the therapies and conditions most typically form the main focus of study. Baskaran (2013) analyzed that informatics focuses on understanding issues from a stakeholder perspective and applying information and other technologies as needed. That is, it deals with system problems first, not individual technologies in the system. In this regard, informatics considers the technology to be the answer to technical decisions, as it believes that technology is "developed according to its own laws, has its own potential, and is limited only by available material resources." can do.

Baskaran (2013) used a total of 6610 records from the Web of Science to contribute to the academic productivity and research of the encryption fields in four major countries: China, the United States, Taiwan, and Japan. It was analyzed that the distribution of diversity was evaluated and related research areas. Baskaran (2013) argued that doubling time (Dt) tends to increase and decrease in this study. The degree of cooperation and its average value is determined to be 0.963. The three institutions of are productivity leaders.

That is Aragappa University, National Chenking University, Anna University, where CECRI is located. Baskaran and Binu (2019) analyzed that most of the 416 respondents (98.8%) were looking for educational and research information. Research results can determine various parameters of scientific access to electronic resources. Research facilitates the acquisition of electronic information and helps stimulate user research and academic thinking.

Baskaran (2018) investigated the role of computers in the provision of education. Baskaran (2016) discussed the best papers published in the Bioinformatics Journal, and Harvard scientists contributed most of the papers to this study. Both RGR and DT showed this trend throughout the study. Baskaran (2015) investigated the three most important paradigm shifts in 21 library environments. Baskaran (2015) analyzed that US scholars contributed a total of 15832 (30.815%) of articles, 87.947% of which were published as journals. article. Harvard scientists have received a lot of attention in various research papers and occupy a leading position in research collaboration in the field of enzyme research. Baskaran (2012) argued that doubling time (Dt) tended to fluctuate during the study period. The results use the least squares method to exclude productive authors and the maximum likelihood method to examine the exponential growth of authors. In the process, it was decided that Lotka's law was applicable to graph theory research.

Baskaran and Ramesh (2019) analyzed that the study analyzed that electronic information access patterns between faculty and staff play an important role in performing a variety of tasks for engineering respondents. According to this survey, the survey aims to analyze that 76% of respondents are male, of which 26% are female. Baskaran and Ramesh Babu (2019) investigated the publishing productivity of forensic outcomes from 1989 to 2016. Growth of publications in research, RGR and Dt of research results, cooperation between authors.

Baskaran (2018) analyzed that the highest SD is 21. 71405 and 21.71405 Issues found Missing smartphone and lacking security of personal data. The best resume was 864.5, which was found in the absence of personal data security. Baskaran and Karuilancheran (2015) has a significance level of 29 degrees of freedom at C.V. 0.05, which gives a chi-square (X2) calculation of 5309,368. After that, the performance of researchers began to decline. It was supported by SPI, which is only between 9 and 10. Baskaran (2014) discussed the quantitative analysis of the productivity and characteristics of citations from Library and Information Science (LIS) publications from 2003 to 2012.

A total of 1,942 articles and 12,502 citations have been published in the SSCI-indexed LIS journal. 21.36% of the citations were received in 2012. Baskaran, C. (2013) analyzed that 70(59.1%) of faculty members who participated in the survey learned through 28(56%) guidance from teachers / managers. There is evidence that the majority of faculty and staff, 21(42%), use their department to access information, and 28 (40%) of researchers access their department's e-journals. Baskaran (2019) analyzed 4,444,210 (55.26) respondents who were very happy with OPAC/Web-OPAC. 205 (53.90) respondents are very happy with EDatabases and 192(50.52) respondents are very happy with the automated lending service.

Baskaran (2018) uses the software HistCite to publish on the number of publications, growth rate

and doubling time, distribution of publications across journals, publication output, author patterns, and bioremediation research in India. We investigated a map of the impact of this on global quotes. VOS viewer. Indian Institute of Technology, Baba Atomic Research Center, and CSIR are leading producers of research in the field of bioremediation. Sivakami and Baskaran (2016) analyzed a total of 64,030 datasets from the Medline database in this study.

Resources of all types showed the largest decline in 2010 and 2011, with an average of 2,784 publications per year. We conducted a time series analysis of the most productive countries (US) and India and compared the results over the next few years. Baskaran (2014) describes the quality of the collection in terms of books, magazines and resources.

Yahoo is the most popular search engine for internet surfing. Book rental is a favorite of the staff. Saravanan and Baskaran (2019) investigated bibliographic binding, linguistic distribution, keyword distribution, geographical distribution of documents, and a history of local and global citations by established institutions. Analyzed by Bascalan (2019). Most of the 90 (33%), 76 (27.8), and 51 (18.7%) respondents said they "fully agree," "agree," "no comment," "easily accessible," and "prefer." I answered. Analyze large amounts of data. " Baskaran (2018) surveyed most publications in 44.15% of the two authors in the analysis of BM. Guptha has published 18 articles on DJ LIT and is the lead author.

Baskaran, (2013)explored Degree of collaboration and its' mean value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, National Cheng King University, and Anna University. Baskaran and Sivakami, (2014) discussed Quantitative analysis is carried out to identify the literature growth, authorship pattern, collaboration and journal distribution on Swine influenza disease research based on data obtained from Pubmed databases for a period from 2006-2010.

A total of 2360 articles were downloaded from Pubmed database using the search term "Swine*" subjected to bibliometric data analysis techniques. Baskaran (2013) analysed that Information science focuses on understanding problems from the perspective of stakeholders and then applying information and other technologies as needed. In other words, it tackles systemic problems first rather than individual pieces of technology within that system. In this respect, information science can be seen as a response to technological determination, the belief that technology "develops by its own laws, that it realizes its own potential, limited only by the material resources available, Baskaran (2013) analysed that a total number of 6610 records which were retrieved from the Web of Science was used to assess the academic productivity and distribution of research diversity of cryptography field from four major countries China, USA, Taiwan and Japan which contributed more papers in cryptography and allied field of researches.

Baskaran (2013) discussed that Doubling time (Dt) was found to be increased and decreased trend in this study. Degree of collaboration and its means value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, National Cheng King University and Anna University.

Baskaran and Binu (2019) analysed that Majority of respondents 416 (98.8%) are searching for educational and research Information. The findings of the study could identify the various parameters while access Electronic resources by the academic community. The study would helpful to bring to access Electronic Information for momentum of gain research and academic ideas among the users. Baskaran (2018) examined that computers became involved in the delivery of education, a proposed definition identifies the delivery of instructional materials, using both print and electronic media. Baskaran (2016) discussed the highest publication published in Bioinformatics journal and Harvard University scientists contributed highest number of publication in the study.

RGR and DT is exhibits that fluctuating trend happening whole period of study. Baskaran (2015) studied the three Major Paradigm Shifts 21st Century Library Setting, Revolutionary Changes, Library Roles, Millennial Generation, Cyber Infrastructure Characteristics, Major Challenges of 21st Century Librarian, Tasks, Library Should Be, the researchers expectations and so on. Baskaran (2015) analyzed the USA scientists have contributed totally 15832 (30.815%) items and include 87.947% percent are appeared as journal articles. Harvard University scientists are much attention in produced large number of research papers and they hold top level among research collaboration in enzyme research.

Baskaran (2012) discussed that Doubling Time (Dt) has shown as fluctuating trend during the period of study. The result examined the author exponential growth using least squares excluding high productive authors and maximum likelihood method. Lotka's law is found to be applicable to graph theory research during the study period. Baskaran and Ramesh (2019) analyzed that The study analyses Electronic information access pattern among the faculty members is the significant role in the Engineering institutions towards various tasks to fulfil by the respondents. The study aim to analyze that 76 percent of the respondents are male and 26 percent of them are female observed from the study.

Baskaran and Ramesh Babu (2019) examined the publication productivity of Forensic Medicine output during 1989-2016. The growth of the publications, RGR and Dt of the research output, Collaboration of authors, Collaborative co-efficient etc. in the study. Baskaran (2018) analyzed the highest SD was 21. 71405 and 21.71405 the problems were found Do not have smart Phone and Lack of security on personal information. The highest CV was 864.5 found on Lack of security on personal information. Baskaran and Karuilancheran (2015) analyzed the C.V. at 0.05 significant level for 29 degrees of freedom is 42.56 and the calculated value of Chi-Square (X2) obtained in this case is 5309.368.

Afterwards, the performance of researchers started diminishing. It was supported by SPI that ranges between 9 and 10 only. Baskaran (2014) discussed the quantitative analysis of the productivity and characteristics of citations of Library and Information Science (LIS) publications during 2003-2012. A Total of 1942 contributions published and 12102 citations received in the LIS journals indexed in SSCI. 21.36% of citations were received in 2012. Baskaran, C. (2013) analyzed that faculty members who respondents to the study, 70 (59.1%) learned through guidance from their teachers/guide 28 (56%). It is proved that the highest proportion of faculty member, 21 (42%), use their department for accessing the information, while 28 (40%) of the research scholars were accessing their e-journals in their department itself.

Baskaran (2019) analyzed the 210 (55.26) respondents are extremely satisfied on OPAC/ Web OPAC. 205(53.90) respondents are extremely satisfied on E-Databases, 192(50.52) respondents are extremely satisfied on Automated circulation services. Baskaran (2018) explored the map the number of publications, growth rate and doubling time, scattering of publication over journals, and its impact on publication output, authorship patterns and Global citation score of bioremediation research publication in India using the HistCite, VOSviewer software. Indian Institute of technology, Baba atomic research centre and CSIR are the major producers of research output in the area of bioremediation. Sivakami and Baskaran (2016) analysed that total of 64030 records were obtained from Medline databases have been taken for this study. All kinds of resources are fallen in highest in the year 2010 &2011 with average publications of 2,784 per year. The Time series analysis ware carried out for the top most productive country (USA) and India to compare the research output in forth coming years. Baskaran (2014) discussed quality of collection with respect to books, Journals and e-resources. Yahoo is most popular search engine among the user for browsing the net. Book lending service is the most prefer by the staff.

Saravanan, and Baskaran (2019) examined the identifies bibliographic coupling of the institution, language distribution, keyword distribution, geographical distribution of the literature and Historiography on Local and Global Citation is also analyzed. Baskaran (2019) analyzed the majority 90 (33%), 76 (27.8) and 51 (18.7%) of the respondents of them recorded that "Strongly Agree", "Agree", and "No Comment" respectively to prefer "Easy to access massive amount of data to analyse".

Baskaran (2018) examined the majority of publications 44.15% representing by the two authors in the analysis BM. Guptha was published 18 papers in DJLIT, who is a ranked 1 author. It followed by Chenupathi K. Ramiah shored second his publications 11. University of Delhi, which is the top ranked institution. Binu and Baskaran (2017) analyzed the assess the user satisfaction with respect to the eresources and services.

It reveals that majority of respondents are using e-resources at large extent or very large extent for different purposes. Users' satisfaction level is very high with respect to various electronic resources and services available in the library. Ramesh Babu and Baskaran (2017) analyzed the analyses that research growth trend of Forensic Medicine during 1989-2015. It is observed highest out of Forensic Medicine research Forensic Medicine research in 2013 was 447 (11.05 %) of the publications, followed by 420 (10.38%) of the publication brought out in 2015. the doubling time of the publications also a fluctuate trend appears whole study period.

Baskaran (2020) analyzed the lowest relative growth rate (RGR; 0.04) was found in 2008. 2010, 2012, and 2014 RGR rose up to 0.75 in 1990, and the average mean value of relative growth rate (RGR) is 0.15. The highest number of publications (293; 63.55%) accumulated from information science library science. This area has been ranked first among 21 research fields listed in the study. Baskaran (2020) describes Altmetrics use in public APIs across platforms to gather data with open scripts and algorithms. Altmetrics did not originally cover citation counts. It calculated scholar impact based on diverse online research output, such as social media, online news media, and online reference managers. Baskaran, C. (2020) analyzed the 11,941 total records on social networks and media retrieved from Web of Science database during the period of study. Palanivel and Baskaran (2018) studied the 2313 scholarly communications published in the Economic Affairs Journal.

The analysis cover mainly the number of articles, form of document, the study is obtained from the Scopus database in 2313 results for thirty seven years in this results retrieved are analyzed using excel worksheets. Pramanathan and Baskaran (2015) discussed the 199 (49.13%) and 131 (43.52%) of the respondents were female respondents from Bharathidasan University and Periyar University. Majority of the 310 (76.54%) and 198 (65.78%) of the respondents who have got research experience below 3 years from Bharathidasan and Periyar university.

Murugaiah and Baskaran (2013) analyzed the high number of papers was collaborated with United States researchers in the field of Human DNA. The study measures the performance based on several parameters, country year-wise growth rate, authorship pattern, collaborative index, collaborative coefficient, leading collaborative have countries and authors contributed publications in Human DNA research. Baskaran (2020) discussed the maximum 290 (12.20%) of the publications contributed by the researchers from Central Electro chemical Research Institute was highly collaborated with Alagappa Universities, which has top Citations and h-Index 3852 and 32 respectively.

The propounded according to Google Scholar Metrics (GSM) SK Pandian was to be a top ranked researcher, despites his year wise citations shows 4491 and h-Index credited 36 during 2008-2018. Ramesh and Baskaran (2019) analyzed the respondents "Satisfied" with e-resources offering lecturing materials. This data presents that a large number of respondents 265 (51.0%) prefer gateway portal to a "Large Extent' and 139 (26.7%) of the respondents prefer to a "Very Large Extent".

On the other hand, it has also been noticed that 105 (20.2%) of the respondents are "Less satisfied" whereas 11 (2.1%) of the respondents opted "No Comment". Baskaran (2018) discussed the majority of 63 (27.6%) specified "Aware" and Usage of

Whatsapp, 53 (23.2%) You Tube, 47 (20.6%) Google+, 46 (20.2%) Face Book, 23 (10.1%) Tumbler/ Messenger, 21 (9.2%) Twitter, 18 (7.9%) Others and 17 (7.5%) Instagram. Functions appropriate to their parent institutions.

Baskaran (2021) analyzed the majority 134 (1.96%) of the publications contributed by the researchers from the University of California systems. Zhang Y was the top author has contributed 16(0.23%) of the publications in the field of Web 2.0, subsequently, Kolt GS, Li Q, Vandelantte C, Zhang J, the publications equally appears 13(0.19%) of the publications. Baskaran and Pitchaipandi (2021) analyzed the respondents highly prefer group sites (Yahoo, Google, and Whatsapp). The research analyses that social media tools for research the majority of the respondents highly preferred Facebook wall for shared the research information by the respondents in the eight Universities in Tamil Nadu.

Pitchaipandi and Baskaran (2021) examined the 51.3% of the respondents visit 1/hr day in using WhatsApp. 78.9% of the respondents added the Whatsapp Groups from Friends of the respondents respectively. Among the WhatsApp as instructive help devices and administrations in a Thiruvalluvar University. Baskaran (2020) analyzed that there are twenty five institutions are listed, among them University of Washington has contributed highest 48 (0.98%) of the publications witnessed be a first position out of twenty five.

Radhakrishnan and Baskaran, C. (2020) discussed there is a moderate correlation between Citation and Altmetric Score. Only one paper obtains citation and Altmetric score equally. Another paper gets citation and Altmetric score in near equal. Out of the 10 papers, four papers received more citations. Of the 4 highly cited articles, three papers receive very low Altmetric score and only one paper receives high Altmetric score.

Baskaran and Binu (2020) discussed that majority of respondents 109 (21.9%) are post graduates and 75 (17.8%) are having PG with NET qualification. Mean value for 'To borrow books' was 3.86 and assigned the rank one. Majority of respondents 416 (98.8%) are searching for educational and research Information. The findings of the study could identify the various parameters while access Electronic resources by the academic community. Baskaran and Ramesh (2020) analyzed that Two hundred fifty-one (48.3%) respondents rated that information sought from e-books are "excellent" while 205 (39.4%) of the respondents rated them as "very good." Two hundred eighty (53.8%) respondents agree" that electronic journals save the time of the user while 219 (42.1%) of the respondents "strongly agree." A miniscule number, 21 (4.0%), respondents "disagree." Baskaran, C. (2020) discussed that Currently, ROAR lists 1,793 and Open DOAR lists about 1,966 IRs all over the world. It is found that more institutions (47) installed the D-Space (62%). It is followed by e-prints adopted (26), and two institutions implemented OAR through GSDL. Ramesh, P and Baskaran, C. (2019) analysed that at a large number of respondents 265 (51.0%) prefer gateway portal to a "Large Extent'and 139 (26.7%) of the respondents prefer to a "Very Large Extent". On the other hand, it has also been noticed that 105 (20.2%) of the respondents are "Less satisfied" whereas 11 (2.1%) of the respondents opted "No Comment".

Radhakrishnan and Baskaran (2019) analyzed that square root of total authors, who have contributed 7.94 % of the total contribution, is found to be 215.52 in Price square Root Law. The Pareto's 80/20 rules state that 20% of the authors contributed only 46.60% of the total contribution. Baskaran and Babu, P. R. (2019) discussed the activity index and exponential growth of authors analysed during 1989-2016. The result of the study found that publications growth between 11 (0.26%) in 1989 and 447 (10.76%) in 201.

RGR shows a fluctuates trend between 0.02 and 1.02 in 2005, 2006 and 1991 respectively. Complete twenty three years the research could be observed that RGR less than 1. Baskaran, C. (2018) discussed that highest of 2093 (13.94%) citations received by Prof. Sanjeeviraja out of 180 (11.41%) of the Publications during the period. Material Science has 5632 Citations for 488 Publications with the highest h-index was 37. Baskaran and Rameshbabu (2018) conducted the study largest output in was found 447 publications in 2013. It is found the DC between 0.64 and 0.94 and overall DC measured to be 23.08 throughout study period. The study could be found DC was an increased and a decreased trend appeared in the whole study period.

Value n in the field of Forensic Medicine is being analysed, it has calculated the exponential growth is n= 4.4320914 for author. Radhakrishnan and Baskaran (2018) discussed that maximum number of articles 114 (4.83%) were published in the year of 2015. In the Authorship Pattern, the major contribution of articles was from two authors 776 (32.87%). The Time series analysis technique reveals the estimated future growth of articles in the Journal will be increased from 63.81 (2016) to 88.13 in 2020 and 93.66 in the year 2021. Murugiah and Baskaran (2014) analyzed the document types, journal articles were the highest numbers with 7210 papers or 99.26%. From this study, it is observed that the Journal of Biological Chemistry has published with 529 research papers and find top position which is accounted for 7.28% of the total articles. Sivakami and Baskaran (2014) analyzed that kinds of resources are fallen in highest in the year 2010 & 2011. Collaborative authors' productivity is more than a single contribution. The degree of collaboration C= 0.884 represents 88 percent of collaborative authors article that were published during the study periods. Bradford's law fits well on sample. Baskaran, C. (2013) examined the Doubling time (Dt) was found to be increased and decreased trend in this study.

Degree of collaboration and its means value is found to be 0.963. The top three institutions with Alagappa University are Central Electro Chemical Research Institute, National Cheng King University and Anna University. Veeramuthu and Baskaran (2018) analyzed the maximum articles 568 were published in the year 1999 and the minimum 46 in the year 1995. In the authorship pattern, the maximum articles 5131 were published by single author. The RGR in the starting year 1990 is 0.78 and 0.03 in the last year 2017. The Doubling time in the starting year 1990 was 0.88 and in the last year 2017 for 27.47. Baskaran, C. (2011) analyzed the Author's collaboration analyzed through Subramanian's formula and it expressed C= Nm/ Nm+ Ns.

Lotka's law and bradford's law of scattering were applied to count the author productivity and core journals in this specific subject. Lotka's law is n= 2 and Bradford's law scattering 1: n: n2. These have been analysed in this study. Pitchaipandi and Baskaran (2020) investigated the social Networks and Media exchange information, ideas and pictures/videos in virtual communities and networks.

The assessment of this study was the role and consumption of Social Networks/Media Research Communication by the Students and Research Scholars' Social Science at Alagappa University, Karaikudi, Tamilnadu. Senthil Kumar and Baskaran (2018) discussed the Journal named "Advanced Materials Research" ranked in the top position in contributing articles 59 (2.28%) in this field. The highly prolific author is Monteiro S.N who has contributed 41 articles 0.47%. Krishnan and Baskaran (2018) studied the maximum articles 1084 were published by four authors. The RGR in the starting year 2000 is 0.71 and 0.12 in the last year 2017. The Doubling time in the starting year 2000 was 0.98 and in the last year 2017 was 5.96. In the Country wise distribution of articles, the major contribution was from China 1381 (19.21%). Baskaran, and Anbu, S. G. (2011) attempt to the internet based resources by the students of Hindustan college of Engineering, Chennai (India). The aim is to determine the use of Internet based resources by the students skills in handing the different types of documents can access to academic and various purposes. This survey reflects the availability of e-resources and typically examines the quantum of their use in Hindustan college of Engineering.

Objectives of the study

- To analyze the quantum of Page –wise research pattern on the publications in human DNA during 1989-2013.
- To examine the RGR and Doubling time of Pages wise publications during 1989-2013.
- To observe the activity index of world output of human DNA research output.
- To test the applicability of Lotka's law of author productivity in the field of human DNA.

Methodology

The publications are retrieved from the Scopus database on 'Human DNA' research covering the period from 1989 to 2013. Further, the researcher has downloaded the bibliographical data in the form of notepad files; then the bibliographical details are converted to the form of Microsoft office excel format using the PHP (Hypertext preprocessor) scripting language text extracting based on delimiters program. Finally, the unique data are rearranged in Microsoft office excel format to eliminate duplication of the downloaded data. The overall data retrieved 17112 publications, 10 duplicate publications removed by the researcher finally 17102 publications have for analyzing the present study.

Quantum of pages of the research publications in human DNA research

The analysis of the number of pages of publications in Human DNA research output during the period of study. It is observed from Table 1, yearwise output of human DNA research indicates the Quantum of pages of research publications from 1989 to 2013. It is found that 115584 pages containing 17102 publications during the period. The highest number of pages of 5198 (4.50%) find out in 736 publications in 1994, followed by 4988 (4.32%) of the pages found out in 686 publications in 2001. It concludes that the overall pages of the publications range between 3829 (3.31%) appeared in 597 publications in 1989 and 5197 (4.50%) of paper appeared in 736 publications in 1994. It is found that in general, when to increase the growth of the publication simultaneously pages growth is also to be increased. It is noted that the same trend did not appear in this case that the fluctuating trend has appeared during the study.

Table 1: Quantum of pages of the research publications in human DNA research.

Year	No. of Publications	No. of Pages	Percentage	Cumulative Percentage
1989	597	3829	3.31	3.31
1990	675	4981	4.31	7.62
1991	712	4299	3.72	11.34
1992	673	3927	3.40	14.74
1993	733	4441	3.84	18.58
1994	736	5198	4.50	23.08
1995	767	4732	4.09	27.17
1996	756	4803	4.16	31.33
1997	734	4907	4.25	35.57
1998	727	4504	3.90	39.47
1999	736	4744	4.10	43.57
2000	681	4719	4.08	47.65
2001	686	4988	4.32	51.97
2002	674	4661	4.03	56.00
2003	673	4654	4.03	60.03
2004	660	4887	4.23	64.26
2005	662	4721	4.08	68.34
2006	619	4513	3.90	72.25
2007	615	4640	4.01	76.26
2008	630	4581	3.96	80.22
2009	688	4775	4.13	84.35
2010	616	4185	3.62	87.98
2011	639	4021	3.48	91.45
2012	720	4977	4.31	95.76
2013	693	4897	4.24	100.00
Total	17102	115584	100.00	



Fig. 1: Quantum of pages of the research publications in human DNA research.

Relative Growth Rate (RGR) and Doubling Time (Dt) of Pages

Table 2 observed that, Relative Growth Rate (RGR) and Doubling Time (Dt) for the pages of the publications in human DNA research. The Relative Growth Rate was observing that fluctuating trend range between 0.01 in 2000 and 0.26 in 1991. The Doubling time (Dt) also appeared a fluctuating trend between 2.67 in 1990 and 69.3 in the years 1996 and 2000 were found to be an upward and downward trend in the period of study.

An average mean of Relative Growth Rate (RGR) and Doubling Time (Dt) were 0.07 and 17.41 respectively. It could be observed that the Relative Growth Rate and Doubling Time (Dt) are shown that a fluctuating trend shows in pages output.

World output Vs. Journal Article (J A) of Activity Index

Table 3 shows that the Activity Index of the journal output and world output of Human DNA research. It is observed that research out of the journal articles from 560 in 1989 and rose up to 698 publications in 1996, suddenly the activity index appeared that an increase and a decreased trend throughout the period. It is found that the Activity Index of articles in journals, the proportion of contribution to productivity, and in terms of growth is seen from two different angles. The first is one volume of articles produced by a specific variable (articles in journals) in different years and thus the extent of the increase and the second one is the volume of growth of literature in different years in relation to the world in productivity. It could be observed that the result the of Activity Index witnessed the

Year	No. of Pages	Cum. Pages	W1	W2	W1-W2 R(a)	Mean (a) 1-2	Doubling time	Mean dt (a) 1-2
1989	3829	3829		8.25				
1990	4981	8810	8.25	8.51	0.26		2.67	
1991	4299	13109	8.51	8.36	0.15		4.62	
1992	3927	17036	8.36	8.27	0.09		7.7	
1993	4441	21477	8.27	8.39	0.12	0.15	5.78	5.19
1994	5198	26675	8.39	8.55	0.16		4.33	
1995	4732	31407	8.55	8.46	0.09		7.7	
1996	4803	36210	8.46	8.47	0.01		69.3	
1997	4907	41117	8.47	8.49	0.02		34.65	
1998	4504	45621	8.49	8.41	0.08	0.07	8.66	24.92
1999	4744	50365	8.41	8.46	0.05		13.86	
2000	4719	55084	8.46	8.45	0.01	0.03	69.3	20.92
2001	4988	60072	8.45	8.51	0.06		11.55	
2002	4661	64733	8.51	8.44	0.07		9.9	
2003	4654	69387	8.44	8.44	0		0	
2004	4887	74274	8.44	8.49	0.05		13.86	
2005	4721	78995	8.49	8.45	0.04		17.33	
2006	4513	83508	8.45	8.41	0.04		17.33	
2007	4640	88148	8.41	8.44	0.03		23.1	
2008	4581	92729	8.44	8.42	0.02	0.03	34.65	21.25
2009	4775	97504	8.42	8.47	0.05		13.86	
2010	4185	101689	8.47	8.33	0.14		4.95	
2011	4021	105710	8.33	8.29	0.04		17.33	
2012	4977	110687	8.29	8.51	0.22		3.15	
2013	4897	115584	8.51	8.49	0.02	0.09	34.65	14.78
Total	115584				1.82	0.07		17.41

Table 2: Relative Growth Rate (RGR) and Doubling Time (Dt) of Pages.

higher activity and lower activity found to be a 96 in 2003 and 104 in 1989.



Fig. 2: Relative Growth Rate (RGR) and Doubling Time (Dt) of Pages.

Single authored Vs. Multi authored papers in human DNA research

It has been analyzed the authorship pattern of the

publications in human DNA research. It is a major aspect of the research that evaluates the single and multi-authored papers of the publications. The analysis is helping to identify the research dimension on the authorship pattern in any discipline. Table 4 shows that, year wise and single Vs. multi authors research output in Human DNA output.

It is found that 747 (4.37%) of publications were contributed by single authors and the remaining 16355 (95.63%) of the publications have contributed by multi-authored, also noted that a maximum of 46 papers was contributed by a single author in 1995.

It is noted that over 95% of the publications shared in collaborative nature. It is also found that the degree of collaboration of authors from 93 to 98 and it is also observed that the Degree of Collaboration appeared that upward trend throughout the study period. The average value of the Degree of Collaboration is 0.96.

Year	R. Output of J A	COP = A	World output	WOP = B	A/B	AI Value
1989	560	0.036	597	0.035	1.04	104
1990	603	0.039	675	0.039	1.00	100
1991	646	0.042	712	0.042	1.00	100
1992	601	0.039	673	0.039	1.00	100
1993	640	0.042	733	0.043	0.97	97
1994	661	0.043	736	0.043	1.00	100
1995	680	0.044	767	0.045	0.99	99
1996	698	0.045	756	0.044	1.03	103
1997	662	0.043	734	0.043	1.00	100
1998	656	0.043	727	0.043	1.00	100
1999	679	0.044	736	0.043	1.03	103
2000	607	0.039	681	0.040	0.99	99
2001	619	0.040	686	0.040	1.00	100
2002	596	0.039	674	0.039	1.00	100
2003	578	0.038	673	0.039	0.96	96
2004	574	0.037	660	0.039	0.97	97
2005	589	0.038	662	0.039	0.99	99
2006	562	0.037	619	0.036	1.01	101
2007	546	0.036	615	0.036	1.00	100
2008	563	0.037	630	0.037	1.00	100
2009	625	0.041	688	0.040	1.01	101
2010	561	0.037	616	0.036	1.01	101
2011	588	0.038	639	0.037	1.02	102
2012	651	0.042	720	0.042	1.00	100
2013	623	0.041	693	0.041	1.00	100
	15368		17102			

Table 3: World output Vs. Journal Article (J A) of Activity Index.



Fig. 3: World output Vs. Journal Article (JA) of Activity Index.

 Table 4: Single authored Vs. Multi authored papers in human DNA research.

Year	Single Author	Per- centage	Multi Author	Per- centage	World Output	Degree of Colla- boration
1989	42	0.25	555	3.25	597	0.93
1990	44	0.26	631	3.69	675	0.93
1991	40	0.23	672	3.93	712	0.94
1992	37	0.22	636	3.72	673	0.95
1993	43	0.25	690	4.03	733	0.94
1994	45	0.26	691	4.04	736	0.94
1995	46	0.27	721	4.22	767	0.94
1996	39	0.23	717	4.19	756	0.95
1997	36	0.21	698	4.08	734	0.95
1998	30	0.18	697	4.08	727	0.96
1999	30	0.18	706	4.13	736	0.96
2000	26	0.15	655	3.83	681	0.96

2001	34	0.20	652	3.81	686	0.95	
2002	31	0.18	643	3.76	674	0.95	
2003	19	0.11	654	3.82	673	0.97	
2004	24	0.14	636	3.72	660	0.96	
2005	21	0.12	641	3.75	662	0.97	
2006	15	0.09	604	3.53	619	0.98	
2007	20	0.12	595	3.48	615	0.97	
2008	27	0.16	603	3.53	630	0.96	
2009	16	0.09	672	3.93	688	0.98	
2010	16	0.09	600	3.51	616	0.97	
2011	18	0.11	621	3.63	639	0.97	
2012	23	0.13	697	4.08	720	0.97	
2013	25	0.15	668	3.91	693	0.96	
Total	747	4.37	16355	95.63	17102	0.96	

Table 5: Lotka's law of author productivity.

No. of Publ- ication	Observer no. of Authors with n (an) or F	Observed% of authors 100/ an/a1	Expected No. of authors (an=al/ n2) P	Expected% of authors predicated by Lotka's /100n	(F-P)2/P
1	79883	100.000	79883.00	100.00	0
2	2104	2.634	19970.75	25.00	15984.41
3	359	0.449	8875.89	11.11	8172.41
4	216	0.270	4992.69	6.25	4570.03
5	96	0.120	3195.32	4.00	3006.20
6	68	0.085	2218.97	2.78	2085.06
7	34	0.043	1630.27	2.04	1562.97
8	26	0.033	1248.17	1.56	1196.71
9	21	0.026	986.21	1.23	944.66
10	11	0.014	798.83	1.00	776.98
11	14	0.018	660.19	0.83	632.49
12	4	0.005	554.74	0.69	546.77
13	4	0.005	472.68	0.59	464.71
14	5	0.006	407.57	0.51	397.63
15	7	0.009	355.04	0.44	341.17
16	5	0.006	312.04	0.39	302.12
17	3	0.004	276.41	0.35	270.44
18	6	0.008	246.55	0.31	234.70
19	1	0.001	221.28	0.28	219.29
21	2	0.003	181.14	0.23	177.16
22	2	0.003	165.05	0.21	161.07
25	3	0.004	127.81	0.16	121.88
26	4	0.005	118.17	0.15	110.31
28	1	0.001	101.89	0.13	99.90
29	2	0.003	94.99	0.12	91.03
30	1	0.001	88.76	0.11	86.77
31	1	0.001	83.12	0.10	81.14
34	1	0.001	69.10	0.09	67.12
42	2	0.003	45.29	0.06	41.37
Total	82886			X ²	1526.66

Lotka's law of author productivity

Table 5 indicates the author's productivity in human DNA research output. The analysis of data invalidates Lotka's findings that the proportion of all contributions that make a single contribution is less than 60 % at first observation. Further, Lotka's Chi-square model confirms the source trend. It explains the fact that the calculated X2 value is 1526.66 which is less than its tabulated value at a 5 percent level of significance.

Thus the present analysis clearly invalidates Lotka's findings. In the present analysis, productivity is attributed to several factors. If complete publication details of an author are taken, the Lotka's law testing may present a different picture. In this study, the research productivity of human DNA literature is examined. At the first observation, it can be analyzed that data invalidate the Lotka's findings that the proportion of all contributions that make a single contribution is less than 60%.

Conclusion

The output of six continents African countries published the least number of publications in human DNA research, South America and Oceania countries also produced a less number of publications in this research. In this connection, the government of the least number of publications published countries should allocate more funds for DNA research. There is a need to encourage and motivate collaborative research of human DNA among the European, North American, and Asian scientists and other scientists of Oceania, South American, and African countries.

In order to improve the quality of human DNA research, European scientists should be deported to developed countries to undergo training programs with a view to increasing the skill and efficiency of the scientists. Oceania, South American, and African countries' scientists may be motivated to produce a number of publications on human DNA research based on the present study. Based on the findings, the neglected areas of human DNA research may be identified, so that the scientists may be encouraged to carry out more research activities in those areas of human DNA research. From the inferences of the present study, the productivity of the author can be identified. Therefore, the individual scientist may be stimulated to publish more contributions instead of a single author's contribution. Moreover, the present study may serve as a beacon light to information seekers.

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Perception and Attitudes of Research Scholars & Faculty Members of Osmania University towards Research Data Management System & Role of Library & Information Centres: A Study

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How to cite this article:

Ravi Kumar Chegoni/Perception and Attitudes of Research Scholars & Faculty Members of Osmania University towards Research Data Management System & Role of Library & Information Centres: A Study/Indian J Lib Inf Sci 2022;16(1):53-59

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Accepted on: 19.02.2022

Abstract

The present study "Perception and Attitudes of Research Scholars & Faculty Members of Osmania University Towards Research Data Management System & Role of Library & Information Centres: A Study" reveals with the generation of Research Data, Storage of Research Data, utilisation of Research Data, awareness of the sharing of research data, preserve/conserve their data for long term use, attitudes of Research Scholars and Faculty Members of sharing of their research data with other researchers/academicians. And also role of library and information Centres in providing & managing Research Data Management System in discussed briefly".

Keywords: University Libraries; Research Data Sharing; Research Data Management Systems (RDM) & (RDS).

Introduction

In higher education institutions research centres are playing vital role. In the same way Library and Information centres are back bone of the research in higher education institutions. Especially in university education system research and Development is one of the primary task to innovate/discover new things for the nation.

Research data it includes audio, videotapes, text, images, questionnaire, solutions, photographs field notebooks, laboratory notebook, photographs, primary research data, models, films, and test responses. The duration of research data is quite longer though this research may get good result discover/innovative new things by the quality library and information centres in university level. In university level Research Scholars and Faulty members are doing research and generating various innovative Research Data. While utilising Research data there are using various innovative steps to easy access to the other researchers also by the making/put open access. And also this research Data are preserving various online formats ex.. Cloud storage, Research Gate.

- 1. Academic libraries can provide a standard based organisation of information to the research Scholars and Faculty members.
- 2. Academic libraries are strongly involved and supporting the researcher's and faculty members
- 3. Library professionals are providing various services, such as bibliometric services, library-led publishing services to the Researchers

and Faculty members

- 4. Based Library and Information science professional skills provide research data management services to researchers and Faculty members.
- 5. Library and information science professionals can play many roles with a solid basis in data management principles work to bridge the gaps between Researcher and Faculty members.

Need of the Study

Osmania University is 100 years old Heritage University in Hyderabad, Telangana. Osmania University has various disciplines such as social sciences, sciences, commerce, management, technology, Arts, Sciences, engineering more than 100 courses are running and Vocational Education at Diploma, Undergraduate, Postgraduate & Doctoral Level. Osmania University has developed the Centre of Research for Development to provide an interface between Research Scholars and faculty members in technical courses and the industry. Innovative methods in teaching and training in Osmania University. Based on that Generation of Research Data, Management of Research Data, Utilisation of Research Data is mandatory now days.

Review of Literature

- Bunkar, Anjana R & Bhatt, Dhaval D. (2020) 1 on their topic "Perception of Researchers & Academicians of Parul University towards Research Data Management System & Role of Library: A Study" strongly foucused on the perceptions of researchers and academicians of Parul University on research data management and research data sharing. It explores the ways the researchers preserved their research data for future use, And also explores the ways the researchers and academicians to the organisation, preservation, and sharing of research data.
- 2. Jagan R & Malhotra S (2017) on their topic "Attitude of of Researchers of JNTU towards Research Data Management System & Role of Central Library"" in their study strongly emphasis on the researchers & faculty members Research Data Generation and also various forms of Research Data formats Discussed. In the ICT world Research data should be available to common researchers and academicians that is main intention of

the Research Data put in to the open Access also focused.

- 3. Michel S & Samuel Johnson (2015) in their topic "Research Data management systems in Higher Education institutions" in their study focused on various research Data management system's in higher education institution of Odisha state universities. And also focused in Research Data may preserve in various online platforms especially Research Gate.
- 4. Schlembach, M.C. & Brach, C.A (2012) in their topic "Research data management and the role of libraries. In special issues in data management" in their study elaborate the role of library and Information centres on Management, engage of Research Data, Utilisation of research in the field of Chemical Sciences. And also discussed various awareness & availability of research data in chemical sciences.

Scope of the Study: The scope of the present study is to find out the level of "perception and Attitude of Research Scholars and Faculty Members of Social Science Discipline of Osmania University" regarding research data sharing, utilisation and management of research data in Osmania University. The study has covered only Research Scholars and Faculty Members of Osmania University.

Objectives of the Study

The present study aim is to analyse the "perceptions and attitudes towards the research scholars and faculty members" regarding research data sharing, research data utilisation and management systems of Osmania University, Hyderabad. Telangana.

The objectives of the study are:

- To know the level of awareness of the sharing of research data among Research Scholars and Faculty Members of Osmanaia University.
- To study the perceptions & attitudes towards Research Data Management System among the Research Scholars and Faculty Members of Osmanaia University.
- To study how the Research Scholars and Faculty Members preserve/conserve their data for long term use in Osmania University.
- To examine the attitudes of Research Scholars and Faculty Members of sharing of their research data with other researchers/ academicians.
- To interpret the role of library and information Centres in providing & managing Research Data Management System.

Methodology of the Study

A Researcher has used an online survey method to study the present problem. The structured questionnaire (Open & Closed ended) was prepared and used for the collection of data. The target population of the study is the Research Scholars and Faculty Members of Osmania University, from different discipline of Social Sciences from Political Science, History, public Administration, Sociology Archelogy, Library and information Science, journalism, psychology etc. Random sampling has been used to select Research Scholars and faculty members for administering the questionnaire. A total of 200 questionnaires have been distributed through email to researchers and faculty members. A total of 170 filled and completed questionnaires received. The data were analysed and presented based on the responses we received from the Research Scholars and Faculty Members of Osmania University.

Data Analysis

Response Rate: Response rate of the 200 questionnaires distributed, 170 valid responses were completed and returned from the Professors, Associate Professors, Assistant professors and Research Scholars. Therefore, the response rate in the study was 85 percent.

Table 1: The designat	tion of respondents.
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Designation	Number of Respondents	Responses in %
Professors	10	05.8
Associate Professor	35	20
Assistant Professor	45	26.47
Research Scholars	80	47.05





The above table and pie diagram shows that the percentage of responses from the Research Scholars and Faculty Members of various departments of Osmania University. Out of 170 respondents, 80 Research Scholars, 45 Assistant Professors, 35 Associate Professors, 10 Professors of various departments of the Social Sciences disciplines of Osmania University were represented. Highest number of responses received from Research Scholars of the Osmania University.

 Table 2: Types of research data generated by Research
 Scholars and Faculty members.

Type of Research Data Generated	Number of Respondents	Responses in %
Experimental data	110	64.70
Textual	105	61.76
Images	100	58.82
Video	78	45.88
Newspaper Articles	75	41.17
Journal Articles	79	46.47
Dairies	40	23.52
Audio	35	20.58
Questionnaires	15	8.82
Letters	10	5.88
Others	-	-

**Multiple answers were permitted.



Fig. Type of research data generated.

The above table & bar graph shows that that various types of data was generated by Research Scholars and Faculty Members. More than 64.70% of the raw research data generated was experimental data following by Textual (61.76%) and images (58.82%) data. It was also found that least percentage is 10% is letters only. Over all the study that many of the respondents generating more than one type of data.

Table 3: Types of format used to save research data byResearch Scholarsand Faculty Members in OsmaniaUniversity.

Types of format used to save research data	Number of Respondents	Responses in %
PDF	105	61.76
Tables	110	64.70
docx	79	46.47
PPTs	78	45.88
Graph/Images	40	23.52
Text Documents	100	58.82
Audio	75	41.17
SPSS Spreadsheet	35	20.58
xls	15	8.82

The above table & bar graph shows that the different types of formats used by Research Scholars and Faculty Members to save their research data. The Research Scholars and Faculty Members use in computer storage the various resources such as CDs, DVDs, portable hard drives and USB Flash drives. They used, tables, SPSS spreadsheets. CSV and Xls files to maintain their data. The majority of them were using Tables (64.70%) & PDF (61.76%) to save their research data. Some of them were using more than one type of format to save their data for future use also.

Table 4: Storage medium used to preserve research databy Researcher Scholars and Faculty Members in OsmaniaUniversity.

Storage medium	Number of Respondents	Responses in %
Personal Computer	120	70.58
Portable Hard Disk	105	61.76
USB Flash Drive	110	64.70
Cloud based storage	58	34.11
Local Computer	60	35.29
Printed Form	85	50
Personal Email	100	58.82
DVD	20	11.76
CD	15	8.82

**Multiple answers were permitted

**Multiple answers were permitted



Types of format used to save research data by researchers and faculty members

Fig. 2: Type of format used to save research data by researchers and faculty members.

The above table & bar diagram shows that the storage medium of research data by Researcher Scholars and Faculty Members. To prevent their research data for long time/term use with different storage methods were used. The most important method used was a personal computer (120)

respondents), USB Flash drives (110 respondents), and portable hard disk (105 respondents). Other storage methods were also used cloud storage; email oneself, CD, DVD, Local Computer and print materials .i.e. in hardcopy with less number of respondents.



Fig. 3: Storage Medium used to preserve research data by Researcher Scholars and Faculty Members in Osmania University.

Table 5: Problems in storage of research data by Researcher Scholars and Faculty Members in Osmania University.

Problems in Storage of Research Data	Number of Respondents	Responses in %
Yes	111	65.29
No	59	34.70



Fig. 4: Problems in storage of research data.

The above table & pie diagram shows that the Research Scholars and Faculty Members faces problems in storage of research data. Out of the 170 respondents, 111 (65.29%) said that they did not get any data storage problems. While 59 (34.70%) respondents said that they get the problems with the storage. The present study reveals that researchers have been more concerned about the storage of the research data but usually respondents do not face any problems in storage the research data.

Table 6: Practice	of data	sharing	exist in	discipline.
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Practice of Data Sharing existing discipline	Number of Respondents	Responses in %
Yes	120	70.58
No	50	29.41

The above table & pie diagram shows that the practice and tradition of data sharing exist in their discipline. The majority of them agreed about the culture and practice of raw research data sharing in their subject filed.



Fig. 5: Practice of Data Sharing existing discipline.

Out of 170 respondents, 120 Research Scholars and Faculty Members said yes while 50 of the Research Scholars and Faculty Members said no, there is no culture of sharing data in their discipline/fields.

Table 7: Freely accessibility of raw data on public domain.

Freely accessibility of raw data on public domain	Number of Respondents	Responses in %
Strongly Agree	65	38.23
Agree	65	38.23
Strongly Disagree	10	05.82
Disagree	25	14.70
Can't say	5	02.94



Fig. 6: Freely accessibility of raw data on public domain.

The above table & pie diagram shows that the views of respondents regarding the free accessibility of research data on the public domain. Majority of the Research Scholars and Faculty Members i.e. 76.46% agreed on the need for free access to research data to all. According to the free accessibility of research data leads to improve the quality, Transparency of research and also avoid duplication of research work. 20% per cent of researchers & Faculty members disagreed to open access.

Out of 170 respondents, 65 of them were strongly agreed about the open-access of the research data according to them and also 10 respondents were strongly disagree to put the open-access of the research data. Only 02.94 per cent of the researchers and faculty have not expressed and their views.

 Table 8: Awareness about the existing data repositories of the discipline.

Awareness about the existing data repositories of the Discipline	Number of Respondents	Responses in %
Yes	100	58.82
No	70	41.17
34.70%		

Fig. 7: Awareness about the existing data repositories of the discipline.

YES NO

65.29%

The above Table & Pie diagram shows the percentage of awareness about the available data repositories of their discipline. Out of the 170 respondents, 100 i.e. 58.82% were aware of the specific subject data repositories of their field while 70 (41.17%) were unaware of the subject-specific data repositories. Only 30 respondents (17.64%) of them submitted their final data to such repositories.140 researchers said that so far they have not submitted and archived research data in any repository. Most of them aware of the Shodhganga, e-pgpatashala. Linkdin and Research Gate.

Table 9: Role of library and Information Centres in managing research data.

Role of Library in Managing Research data	Number of Respondents	Responses in %
Yes	150	88.23
No	20	11.76



Fig. 8: Role of library and information centres in managing research data.

Table & pie diagram shows that the views of Research Scholars & Faculty Members to the involvement of the Library and Information Centres for providing, engaging and managing research data during and after their research work. The majority of Research Scholars and Faculty Members of Osmania University appreciated the idea of the involvement of the Central Library/ General Library in managing research data.

Only 11.76% of the respondents said they do not need library and Information Centres involvement in providing, engaging & managing research data in their research work. 88.23% of the respondents strongly agreed that the central library/General Library should offer some support in providing, engaging, managing, storing and archiving research data for future use. Overall data said that strongly said that library and information centre's are providing research data to the Research Scholars & Faculty Members in Osmania University.

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Use of e-Information Resources by the Science students of Dr. CVRU University, Bilaspur and Kalinga University, Raipur, Chhattisgarh

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How to cite this article:

Dhankumar Mahilang, Ramanand Malviya/Use of e-Information Resources by the Science students of Dr. CVRU University, Bilaspur and Kalinga University, Raipur, Chhattisgarh/Indian J Lib Inf Sci 2022;16(1):61–65.

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Received on: 15.01.2022 **Accepted on:** 15.02.2022

Abstract

An electronic information resources is defined as a resource which require computer access or any electronic product that delivers a collection of data, be it text referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD ROM, on tape, via internet and so on. Over the past few years, a numbers of techniques and related standards have been developed which allow documents to be created and distributed in electronic form. Hence to cope with the present situation, librarians are shifting towards new media, namely electronic resources for their collection developments that the documents of users are better fulfilled. The e-resources on magnetic and optical media have a vast impact on the collections of University libraries.

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

Based on their satisfaction in search tendency and use of e-information resource received by readers in the academic university library topic has been researched in which the information search trend of readers in the use of electronic resources significance has been stated. Further in the present context, information search trend in the Central Libraries Dr. CV Raman University and Kalinga University, Kotni, Raipur (Chhattisgarh).

Keywords: E-information Resources; Library services; Dr. C.V. Raman University Bilaspur and Kalinga University; Raipur.

Introduction

E- Information resources are the resources in which information is stored electronically and which require electronic systems/devices and networks to access and use. The term 'E- information Resource' is a broad term that includes a variety of different models like, e-journals, e-books, online databases, CD-ROMs, e-mail publishing, Online Public Access Catalogues (OPACs), etc. Hence, in this context, the term EIRS (E- information Resources) means "an electronic product that delivers a collection of data, be it text, numerical, graphical or time based as a commercially available resource that has been published with a sole aim to be marketed and for information dissemination." The Electronic Information Resources refer to those materials that require computer access or any other electronic devices. The Electronic resources may either be accessed remotely via the Internet or locally.

Objectives

The objectives of the research study presented are as follows:

- 1. To introduce about Dr. CVRU and Kalinga university.
- 2. To find out the importance of e-information resources.
- 3. To find the use of E- information resource.
- 4. To know the awareness of E-information resources.
- 5. To find out the level of satisfaction of the users.
- 6. To get information about types of electronic means.
- 7. To observe the problems faced by the users and the benefits while using E-Information resources.

Research Methodology

The importance and characteristics of e-information content stored in libraries and their ideas and the way in which E-information Resources are being used in the central library's Dr. CVR University and Kalinga University for research and study presented data collection has been done by random method by preparing its own questionnaire. In which tables have been drawn and the percentages have been interpreted and the results have been reached and suggestions have also been given.

Limitation of the research study

The present study is limited to the students of Dr. C.V. Raman University and Kalinga University Naya Raipur (C.G) the students have used the random sampling technique for the study including 100 students drawn from Dr. C.V. Raman University and Kalinga University, Raipur.

Review of Literature

Upalonkar Shilpa (2018): The author in his research article has studied the usefulness of e-information sources by students of Dharwad Agricultural University and also highlighted the importance of information technology used in libraries. The role of the bookkeepers has also been mentioned.

Pandey Chandra Prakash and Mr. Anil Kumar (2020): In their research article Dev Sanskriti University, Haridwar, studied the information search trend behavior of the users of the Gunthalas, which found that the maximum 48.95 percent of the textual texts were found by the users. Find information through.

About Dr CV Raman University

Dr. C.V. Raman University in Bilaspur is one of the best leading private universities in India which is devoted to achieve excellence in education in research. The Dr. C.V. Raman University, Bilaspur Chhattisgarh is a premium university that maintains a unique pedagogy and innovative teaching methodology.

Established

This university is located in Kargi Road Kota Bilaspur (C.G.) and Established on 3 November 2006 by all India society for electronic and computer technology, under section-2 (f) of the university grant commission (UGC) Act- 1956. It is named after the first noble laureate of the country Dr. C.V. Raman.

Dr. C.V. Raman University (CVRU) is premier University of the state of Chhattisgarh with its 26 departments including education in the field of its various faculties of Library and Information Science, Commerce, Management, Law, Journalism & Mass, Communication, Engineering, IT, Research, Education, Physical education etc. through its numerous courses by an enrolment of huge number of students. The University established in the tribal region of the rural environment of Chhattisgarh with its primary objective and vision of providing higher education to the students of rural background giving an access for them to obtain an easy opportunity for getting an advanced ICT based technological studies contributing to the higher education enhancement Recognized by UGC and approved by AICTE, NCTE, Accredited by NAAC with B+ Grade, Listed in top 200 universities in NIRF by MHRD, BCI as well as certified by ISO:9001:2008, being a member of AIU, the institutional vision of this University reflect upon various initiatives to provide literal, legal, managerial and scientific knowledge to the students generating high morals, ethics and values with cultural heritage in them by helping the society in nation building through nurturing and strengthening the young talents for being the trustworthy citizens of tomorrow.

About Kalinga University

Kalinga University Raipur has emerged as a center of excellence in higher education in central India. Strategically located in Naya Raipur's Smart City. It is a private university. It was established in 2011 under the Chhattisgarh Private Universities (Establishment and Operations) Act 2005. This University has started to carve a niche for itself in the education sector and is rising as a bright star on the horizon for quality education.

E- Information Resources

The library at Kalinga University Raipur is like an integrated knowledge resource center which houses books, journals, Indian and international journals with online journals and other online resources in a large institution supporting all aspects of study and research.³ University National Digital Library (NDL), Network of Developing Library Delnet NPTL. Manupatra (for law students) is a member of several online/digital libraries including J-GATE (Social Science), J-GATE (Engineering) and Technology, INSPEC. To their ERP these E-Information resources are given free access through the logins. Kalinga University Library has 79000 books and also subscribes to various national and international journals.

Types of E- Information Resources

- 1. *E-journals:* E-journals are full-text journals that are accessible via Internet/Intranet. It can be available free or as part of paid-for services. E-journals occupy a major share in e-publishing.
- 2. *E-books:* E-books are portable literary works that can contain large quantities of readable textual information.
- 3. *E-databases:* E-databases are collections of high-quality information for academic research. E-databases are an organized collection of information of a particular subject or multidisciplinary subject core.
- 4. *E-theses & Dissertations:* E-theses and dissertations (ETDs) are an electronic version of the document that describes the scholarly work of a researcher.
- 5. *E-Newspaper:* An electronic newspaper (E-newspaper) is also known as an online newspaper or web newspaper which can be accessed via the Internet.
- 6. *E-Magazines:* E-magazines are kinds of e-resources which published online/CD-E-material.

Use of Delnet E- Information Resources in University Libraries

Delnet was started in India 1988 in India International Center Library and in 1992 it was registered as a society. It was initially supported by the National Information System for Science and Technology (CPS), Department of Scientific and Industrial Research, Government of India. Later it was supported by National Informatics Center, Department of Information Technology, Ministry of Communications and Information Technology, Government of India and Ministry of Culture, Government of India.

NISSAT is established with the main objective of promoting resource sharing between libraries through the development of a network of libraries. Its purpose is to collect, store and disseminate information in addition to offering computerized services to users, so that efforts can be coordinated for appropriate collection development and wherever possible, redundant duplication is minimized. It has more than 2,50,00,000 e-resources including e-books, e-journals, material content, desserts, PhD thesis and research papers.

E-Library Information Services

Services	Services
National digital library (NDL)	J-gate Engineering, J-gate Social and Management, Science
DELNET membership and services	Telephone
Reprographic Services	Internet
Reference Services	OPAC
Selective Dissemination Information (SDI)	Study Book Services
Current Awareness Services (CAS)	Resource Sharing
Email Services	On-Line Data Bases
Barcode Circulation	Multimedia Resource Services
E-Library Services	User Education Programme
Library Software	Printing Scanning Services
Wi-Fi Library	

Data analysis

These obtained data are also being interpreted through tables, which are as follows.

Table 1: Introduction of e-information resources by students.

Number of Students	Number of s resources	students famil	iar with e-inf	ormation
	Intro- duction	Percentage	Non- introduced	percentage
100	85	85%	15	15%

Table 2: Objective of E-Information Resources by students.

Objectives	Students	Percentage
for online studies	60	60%
For research work	10	10%
To achieve text content	20	20%
To receive new information	10	10%

Table 3: Impact on University Library by Students.

Impact on Library	Students	%
The utility of online services has increased.	40	40
Covid-19 has affected or disrupted the functions of the library	40	40
Time saving of readers has appeared.	10	10
Satisfied with the utility of e-information sources	10	10

Table 4: Satisfied with the services of the University libraryby students.

Library Service	Students	Percentage
Satisfied	80	80%
Unsatisfied	20	20%

Table 5: Medium of uses E-information Resourcessearching by students.

Medium	Students	Percentage
Online	50	50%
Offline	10	10%
Online and Offline both	40	40%

Table 6: Types of E-Information Resources used by students.

Types	Students	Percentage
E-books	20	20%
Ejournals	10	10%
E-Dissertation	20	20%
E- newspaper	10	10%
others	40	40%

Table 7: Using of E-Information resources university library

 Problems by students.

Type of Problem	Students	Percentage
Mobile and laptop computers are inconvenient to read	10	10%
Slow downloading speed	20	20%
Language problem	40	40%
Lack of information	20	20%
Others	10	10 %

Table 8: Using of E- Information resources university library benefits by students.

Profit Type	Students	%
Use of time/right knowledge in Covid-19	30	30
Increase in attainment of knowledge	10	10
New information	20	20
Knowledge of acquiring and using electronic resources was gained	30	30
Others	10	10

Results

After the completion of research work, the following results have been obtained which are as follows: -

- 1. 85% students have been found familiar with e-information sources.
- 2. 80% students are also satisfied with the services of the library.
- 3. In the use of e-information source, 40% student's language problem has been mentioned.
- Among the types of E-information resources, 20% have been found to use e-books and 40 % others.
- 5. 40% respondents believe the impact of e-information resources on academic performance.

Conclusion

Use of E-information resources is a massive area for study from the above studies it is observed that study have been carried out the use of einformation resources by the science department students of Dr. C.V. Raman University and Kalinga University, Raipur these study were undertaken on various aspect like use of e- information resources awareness level of using e-information resources, this study results show that the majority of the science students are using the E- information resources for the purpose of study concerned.

E-Information resources have initiated various changes in traditional libraries. "Electronic", libraries" have evolved, some of which have been clearly defined according to research and development projects and certain funding sources. In some cases, however, the definitions for these "libraries" are fuzzy and the categories overlap.

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Abbreviations

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

Checklist

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

• Conflicts of interest disclosed

Authors

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

Presentation and Format

- Double spacing
- Margins 2.5 cm from all four sides

• Title page contains all the desired information. Running title provided (not more than 50 characters)

• Abstract page contains the full title of the manuscript

• Abstract provided: Structured abstract provided for an original article.

- Key words provided (three or more)
- Introduction of 75-100 words
- Headings in title case (not ALL CAPITALS).

References cited in square brackets

• References according to the journal's instructions

Language and grammar

Uniformly American English

• Abbreviations spelt out in full for the first time. Numerals from 1 to 10 spelt out

• Numerals at the beginning of the sentence spelt out

Tables and figures

• No repetition of data in tables and graphs and in text.

• Actual numbers from which graphs drawn, provided.

- Figures necessary and of good quality (color)
- Table and figure numbers in Arabic letters (not Roman).

• Labels pasted on back of the photographs (no names written)

• Figure legends provided (not more than 40 words)

• Patients' privacy maintained, (if not permission taken)

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