

USE OF ELECTRONIC JOURNALS AND ITS IMPACT ON RESEARCH PUBLICATIONS AT VIT UNIVERSITY, VELLORE, INDIA

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ABSTRACT

In the 21st century, most of the library resources are being made available in electronic formats such as e-journals, e-books, e databases, etc. Libraries are moving from print to e-resources either subscribing individually or through consortia. Periyar EVR Central Library in VIT University subscribes to a number of electronic journals to satisfy the information needs of its users. This study tries to identify the usage level of different electronic journals and compare this usage with Scopus indexed publications by the faculty and research scholars of VIT University.

Keywords-*Electronic journals, use of electronic journals, user statistics, Scopus publications*

I.INTRODUCTION

For the last one decade we observed that traditional print journals are being replaced by electronic journals with benefits for libraries and users apparent in many ways. Users can access, download and print out papers quite easily and usage of e – journals has increased due to awareness among the users about the library e – resources and services. Use of electronic journals improves the quality of research by providing enriched contents on different subjects of study. A number of studies have been conducted to measure the use and impact of electronic journals and these have shown positive results. This study tries to identify the usage level of different electronic journals and we compare this with Scopus indexed publications by the faculty and research scholars of VIT University. In particular, this paper examines the use of electronic journals among the users of VIT University and its impact on research publications from the year 2011 to 2015.

II.REVIEW OF LITERATURE:



Many studies have been conducted in India and abroad which gives information on use of electronic resources by the users of library. This will be helpful to the library staff and authorities of the university to decide whether they have to invest more on the development of electronic collection or to go for some other format of journals. Moghaddam and Talwar [1] conducted a survey at IISc and found that, electronic journals were mostly used for research needs and PDF was the most preferred format. Sadanand [2] reports the use of electronic journals by the users of University of Pune and stated that electronic journals are really helpful in finding out the appropriate references.

Baljinder Kaur and Rama Verma [3] observed that the impact of e-resources was visible from the decrease in number of printed journals in comparison to the increase in number of electronic journals. The use of e-journals has increased manifold. The printed material is being quickly replaced by the electronic resources. Thanuskodi and Ravi [4] report that utilization of digital resources by faculty and research scholars of Manonmaniam Sundaranar University, Tirunelveli. Results show that 67.14 per cent of the faculty is familiar with the use of digital resources, and majority of these members are using digital resources for research purpose. Study also reveals that majority of the faculty members are learning the required skills for the usage of digital resources through self-study.

Baskaran [5] analyzed the author productivity, discipline-wise and institution-wise collaboration and ranking of authors in research contribution of Alagappa University during 1999-2011. Relative growth rate (RGR) was found to be fluctuating trend during the study period. The doubling time (DT) was found to be increased and decreased trend in this study. Degree of collaboration and its' mean value is found to be 0.963. In [6], Karpagam et.al have discussed about the h-index, a measure of the scientific output of researchers based on both the quantity and impact of publications, has received great attention from the scientific community. It uses to measure in order to obtain a more balanced view of the scientific production of researchers and that minimizes some of the problems that they present. Many papers have dealt with this index and have proposed new variations of the h-index to overcome its limitations. They conclude that, just one specific measure is not shrewd to power the assessment of researchers or of research groups. It will strengthen the opinion of administrators and politicians that scientific performance can be expressed simply by one note. Hence, it is suggested that a reliable set of several indicators is necessary, in order to explicate different aspects of performance.

III. ABOUT THE UNIVERSITY

VIT University or VIT, formerly called Vellore Engineering College, is an Indian institute of higher education and a deemed university under Section 3 of the UGC Act. Founded in 1984, as Vellore Engineering College, by Mr. G. Viswanathan. It has campuses both at Vellore and Chennai, Tamil Nadu, India. VIT offers academic programs in Engineering, Technology, Applied Sciences, and Management. It offers 20 undergraduate programs, 34 postgraduate, four integrated MS courses and four doctoral programs. VIT has consolidated its disciplines into 10 Schools of Study with the addition of the VIT Law School at its Chennai campus. Research centres are part of the schools to encourage collaboration between the research and coursework areas and provide opportunity for coursework students to participate in research projects. VIT's research strength spans disciplines like CAD/CAM,



Rapid Prototyping, Manufacturing, Product Design, Energy, Biomedical Research, Information Technology, Nanotechnology, Optoelectronics and Materials Engineering. The research output of many educational institutions is steadily growing - as indicated in the recently released report of Scopus, an abstracting and indexing database that includes over 19,000 titles from more than 5,000 international publishers. While IIT-Madras, Chennai and Anna University tops the list of institutions in the state with the highest number of research papers indexed by the database, VIT University is a close 3rd. On the nationwide level VIT University is ranked 5th, placing it ahead of IIT Delhi and Bombay, with Indian Institute of Science, Bangalore ranked first.

IV. ABOUT THE LIBRARY:

The Periyar EVR Central Library of VIT University has been built to International Standards, Spreads over to Ground plus Six Floors with an area of 7,770sq.m. It is centrally air-conditioned, well-protected with fire alarm, CCTV and 3M-book security system. Specialized collections of Books, Journals & Non-book materials are available in Basic Sciences, Engineering and Technology, Biotechnology, Humanities and Social Sciences. The Collection replete with 2,72,570 Documents, 2,20,200 Volumes of Books 27,796 Back volumes, 14,887 CDs\ DVDs. 561 video cassettes and 317 Audio Cassettes. Central library subscribes to 760 National and International journals and access to 13,250+ e-resources. The Library has a Video Conferencing facility and NPTEL video courses in the different fields of education. Apart from central library each school having a separate library with good collection. Central Library has a video conferencing facility and also provides classroom teaching through EDUSAT Programmes in the different fields of Engineering. As a part of digital information, ACADO a digital repository provides course materials and lectures of reputed professors accessible through online by the user community of the university.

V. LIBRARY SERVICES

With the help of the e – journals, library is in a position to render the services to its users which they have not able to provide with its print journals. VIT library provides the following services to the users.

- (i) Subscribed more than 760 national and international printed journals which also contain the journals published by IEEE & IET and as per the policy of the publisher the users are getting free access to the electronic version of the printed one.
- (ii) The subscribed e-resources are ASCE Journals, ASME Journals, ASTM Journals and Standards, IEL online (IEEE & IET), Science Direct , EBSCO Business Source Complete, EMERALD Management 200 Journals, SCIFINDER Scholar, SAE Technical Papers, Indian Standards Codes, British Standards Euro Codes, ACM, ProQuest ABI/Inform Complete, ProQuest Dissertation and Thesis (ETD), Springer link 1600+ Journals, Math SciNet, Nature Publishing Group Journals, Scopus (e–bibliographic database with 15,100 peer reviewed journals indexing and abstracts).
- (iii) Also subscribed Engineering Village - Referex subject collections e-books and ebrary e-book collections.

VI. OBJECTIVE OF THE STUDY



The following objectives were framed for the study.

1. To study the different types of electronic resources used by the students and faculty.
2. To find out whether the user are making use of the electronic resources.
3. To examine the year-wise distribution of Scopus indexed publications in VIT.
4. To know the connection between the usage of e-resources and publications.

VII. METHODOLOGY

First we examines the existence of various e-resources and services are available at Periyar EVR Central Library in VIT University. The study also highlights different types of electronic resources used by students and faculty and frequency of using electronic resources for the last five years from 2011 to 2015.

Then we analyse the research publication of VIT University in the field of Arts, Science, Engineering and Technology. The degrees of collaboration of authors are examined to identify the pattern of research contribution from 2011 to 2015. The study is based on the data retrieved from Scopus indexed database, an online database provided by Elsevier publications.

Scopus is the largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings. Delivering a comprehensive overview of the world's research output in the fields of science, technology, medicine, social sciences, and arts and humanities, Scopus features smart tools to track, analyze and visualize research. As research becomes increasingly global, interdisciplinary and collaborative, you can make sure that critical research from around the world is not missed when you choose Scopus. From researchers pursuing scientific breakthroughs to academic institutions and government agencies evaluating research, Scopus is the abstract and indexing database of choice. Worldwide, Scopus is used by more than 3,000 academic, government and corporate institutions and is the main data source that supports the Elsevier Research Intelligence portfolio. Scopus is designed to serve the research information needs of researchers, educators, administrators, students and librarians across the entire academic community. Whether searching for specific information or browsing topics, authors, journals or books, Scopus provides precise entry points to peer-reviewed literature in the fields of science, technology, medicine, social sciences, and arts and humanities.

VIT University publications identified on Scopus by searching for the string "VIT" in the author affiliation field. VIT University publications from 2011-2015 are considered. The research papers published by the researchers of VIT University in the field of Life Sciences, Physical Sciences, Social Sciences & humanities and Health Sciences covered by the Scopus database over the last 5years (2011-2015) were taken as the prime source for the present study, as Scopus is multidisciplinary and provides affiliations of all the authors of a publication. The publications, which affiliate at least one address from VIT University, are taken for the analysis. The total publications produced during the study period accounted for 7268. Using Microsoft Excel 2013 we generate data files that can be imported to excel that takes tabbed data records for further analyze.

VIII. ANALYSIS AND INTERPRETATION OF DATA COLLECTION



The analysis includes:

- (i) Year-wise e-resources analysis
- (ii) Year-wise Publications and
- (iii) Subject-wise Publications

8.1. YEAR WISE E-RESOURCES ANALYSIS

In VIT University Library, the center of attraction for the users is the digital library with 130 clients providing enormous information by subscribing to various e-resources. Research articles downloading from various publishers between the 2011 and 2015 as shown in table.

Table I : User Statistics for for the year 2011-2015

Year	Publisher							
	IEL	Science Direct	Elsevier	ASME	ASC E	Springer link	Emerald	Nature, SciFinder & others
2011	99364	223040	17146	884	352	22987	9845	43001
2012	120059	376792	22118	989	542	32980	11954	65982
2013	140556	493527	26606	1183	776	49076	15678	84356
2014	151157	836017	31017	1469	973	60132	19675	98564
2015	177175	1216335	47640	2285	1453	71293	24986	132989

From Table I, it is noticed that the total number of articles downloaded from IEL online was 99364 in 2011 and has increased to 177175 in 2015. In other words, the number of articles downloaded has increased by two times during the period between 2011 and 2015. The year-wise analysis indicates that every year, the usage and/or downloading of articles have increased year after year. User statistics for Science direct reveals that there is five times increase in the usage of the Science Direct online resources by the students and faculty members in VIT University. That is, usage and download has increased to 1216335 in 2015 from 223040 in 2011. It is observed that the total number of articles downloaded from Scopus was 17146 in 2011 and has increased to 47640 in 2015. In other words, the number of articles downloaded has increased approximately by three times during the period between 2011 and 2015. The year-wise analysis indicates that every year, the usage and/or downloading of articles have increased year after year. In the year 2011 total download articles in ASME and ASCE were 884 and 352. In the year 2015 the ASME usage is increased by 50% when compared to previous years. The utility of the ASME online which has steady growth can be better understood. In the year 2015 the ASCE usage is more than four times when compared to the year 2011. Similarly the utility of Springer journals, Emerald publications, Nature journals, SciFinder scholar, etc. have increased approximately by three times during the period between 2011 and 2015.

8.2. Year-Wise Publications

Details of research papers published by VIT University faculty members and scholars from the year 2011 to 2015 as obtained from Scopus database are presented here.

Table II: Publication details of VIT University (Scopus Database as on 05.02.2016)

Year	2011	2012	2013	2014	2015
Publications	618	893	1661	1967	2056
H-index	23	30	34	39	50

It is observed that the total number of Scopus indexed articles published by VIT faculty and students was 618 in 2011 and has increased to 2056 in 2015. In other words, the number of articles published by VIT has increased approximately by more than three times during the period between 2011 and 2015. The year-wise analysis indicates that every year, the publication of articles have increased year after year. The **h-index** is an author-level metric that attempts to measure both the productivity and citation impact of the publications of a scientist or institute. The **index** is based on the set of the scientist's or institute most cited papers and the number of citations that they have received in other publications. From Table II, we observed that year by year the h-index is increasing significantly.

8.3. Subject-Wise Publications

Details of subject wise publications from the year 2011 to 2015 are presented here.

Table III: Subject wise Publications of VIT University (Scopus Database as on 05.02.2016)

Year > Subject Areas <	2011	2012	2013	2014	2015
Life Sciences	176	242	399	449	585
Physical Sciences	430	672	1233	1491	1684
Social Sciences & Humanities	19	28	74	111	231
Health Sciences	57	79	137	214	289

The number of papers published in Life Sciences journals in 2011 is 176 and has increased to 585 in 2015. Publication of Physical Sciences journals has increased 4 times in the year 2015 where as Social Science & Humanities journals has increased more than 10 times. Similarly there is a significant growth of publications in Health Science journals.

IX. CONCLUSION

This paper reports on a survey of users at the Periyar EVR central library and use of electronic resources, notably e-journals. In particular, it provides the e-resources access by the Faculty and students. Further, the results showed that the usage of E-Resources access from 2011 onwards. Publication data indicates that there was significant research productivity among the researcher in VIT University during the period of study. Year-wise research output of VIT University found to be publications growth gradually increased and sudden change is observed in growth rate shows higher after 2012. The subject- wise contribution of research publications by the researchers from Physical Science shows more number of articles. Based on the user statistics, we concluded that the number of research articles downloaded has increased three times and also VIT publications has increased approximately three times in the year 2015. Hence, to increase the research output, nevertheless, much more is needed to be done to make use of e-journals an even more popular and effective source of researching.

REFERENCES

- [1] Moghaddam, Golnessa Galyani and V.G.Talwar, The use of scholarly electronic journals at the Indian Institute of Science: a case study in India, *Interlending and document supply*, 36(1), 2008, 15-29.
- [2] Y.B.Sadanand, Use and impact of electronic journals on the users of University of Pune, Pune, India, *Library Philosophy and Practice(e-journal)*, 2012, Paper 847.
- [3] Baljinder Kaur, Rama Verma, Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India, *Electronic Library*, 27(4), 2009, 611 – 622.
- [4] S.Thanuskodi and S. Ravi(2011, Use of Digital Resources by Faculty and Research Scholars of Manonmaniam Sundaranar University, Tirunelveli, *DESIDOC Journal of Library & Information Technology*, 31(1), 2011, 25-30.
- [5] C.Baskaran,(2013), Research Productivity of Alagappa University during 1999-2011: A Bibliometric Study, *DESIDOC Journal of Library & Information Technology*, 33(3), 2013, 236-242.
- [6] R.Karpagam, S.Gopalakrishnan, and M.Natarajan, Scientific measures and tools for research literature output, *I.J. Science and Tech.*, 4(3), 2011, 828-833.