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Awareness and Use pattern of Electronic Resources among the Doctoral Research Scholars of Central University of Tamil Nadu, Tiruvarur, India: A study

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Abstract

This paper's main objective is to examine the awareness and use pattern of electronic resources by doctoral research scholar's community of the Central University of Tamil Nadu. The investigator adopted a survey method used for the study. Structured questionnaires were administered to the 100 respondents to collect data for the study and returned questionnaires were analysed using simple percentage by the SPSS software. Findings of the survey revealed that the majority of doctoral students aware of electronic resources and user education/training programs are the most important for maximum utilization of electronic resources in University Library.

Key words: Electronic Resources, Research Scholars, Awareness, Use pattern, Central University, Tamil Nadu, Study.

I. Introduction

Today research is an important source for the society as well as academic and research institutions. Libraries and information centres are playing a vital role to fulfil the gaps in the academic research and scientific activities. Information technology has given a boost to the society for developed quality research and constitutes output. In an information technology era the library and information centres are spending huge amounts for a subsection of electronic information resources to cater the needs of scientists, academic and research users. These electronic resources are very important to give quality research and excellent benefits to society. The academic, research centres and library professionals should give a wide range of publicity and awareness programs to the users for using the good percent of electronic resources for their academic and scientific activities. Researchers Scholars can access electronic information sources through a different of technologies, like Compact Disk Read Only Memory (CD-ROMs), Compact Disk Read Only Memory (OPACs), e-journals, e-

books, bibliographic databases and e-theses/dissertations while the internet provides a broad range of information via search engines, subject gateways, subject directories and other web-based electronic resources. Electronic resources facilitate research and play a complementary role to print, electronic and mixed library resources. Based on this important contribution to academic and research world, the University under study subscribed to a huge number of e-resources.

II. About Central University of Tamil Nadu

Central University of Tamil Nadu was started in the academic year 2009 along with eight other central universities in India by the act of Parliament and fully financial support by the government of India. In November 2009 the university started functioning with eight students in M.A. English course at district collectorate, Thiruvarur. The major motto of the university is to maintain quality education and research in higher education. At present the main campus is situated near Neelakudi, seven kilometers to the North-West of Thiruvarur. At present as of the academic year 2020-21, the university is offering 62 major programs. Out of 62 courses, 2 under graduate, 28 post graduate programs, 6 integrated programs and 25 research programs and 1 diploma courses. The community college was attached to the university and offered different courses to fill the need of in and round the local student. At present 2133 students are enrolled in different courses. 159 regular faculty members are working in the university.

III. Review of Literature

Zhang, Yin (2001)¹ is examining the use of Internet-based electronic resources (e-sources) by a group of library and information science (LIS) scholars. It focuses particularly on how scholars use, cite, and evaluate e-sources during the research process. The study result provides empirical evidence that e-sources are increasingly used among scholars. Complementing the citation data, the results from the author survey shows that e-sources are becoming an important component in scholars' research, and are serving a wide range of purposes and functions.

Garg, Ram Gopal and Tamrakar, Amit Kumar (2014)² conducted a study on Utilization of Electronic-resources by the postgraduate students, research scholars and faculty members of the Indian Institute of Technology. The study results revealed that the users are heavily dependent on E-resources for their required information and to keep themselves up-to-date in their subject area. The majority of the respondents, 63.10% have stated that they are fairly

aware about the number of E-journals/databases available in the library concerned to their subject/discipline.

Ramamani, B., Ramses, C. P (2017)³ examined the Use of E-resources by Faculty and Research Scholars of Speech and Hearing Institutions in India. The study results show that faculty and research scholars are aware of e-resources and access e-resources on a daily basis for their professional needs, it clearly indicates that the e-resources are being used by faculties and researchers to a greater extent in academic and research purposes.

Tahir, Muhammad and others (2010)⁴ explored the Use of electronic information resources and facilities by humanities scholars. The questionnaire survey results revealed the scholars still stay on printed resources but they are interested in electronics resources. Scholars had access to computers and the internet at the office and home. They are regular users of a variety of electronic technologies.

Sonkar, Sharad Kumar and others (2014)⁵ studied on Use of Electronic Resources by Postgraduate Students and Research Scholars of the Banaras Hindu University. The survey results show that the majority of users are utilizing for various purposes like teaching, research and updating their knowledge. 93.84 % users are aware about the e-resources by Internet and (33.48%) utilise e-books, followed by 25.76 % Internet information resources whereas 21.07% users use e-journals, only 19.67% users go for e-database because most of the database don't include full text information.

IV. Research Methodology

The survey method has been used for this study and a well structured questionnaire was constructed as a data collection tool. The questionnaire pre-tested before making the final draft and also consulted the senior professors for corrections. The respondents were selected from the doctoral research scholars of Central University of Tamil Nadu, Thiruvavur. The simple random sample method was selected for the study. Indention to questionnaire method, research conducted personal interview method also conducted to full the objectives of the study

V. Data Collection

Questionnaire was selected for the data collection for the study. The investigator designed and prepared a stricture questionnaire and personally distributed it to the doctoral research scholars of central university of Tamil Nadu. Total population of study is 155 and a simple random method was adopted. The investigator regularly visited the central library, concerned departments and distributed to the research scholars later, gathered telephone numbers and e-

mail addresses for the purpose of reminders frequently. After several reminders to the respondents, the investigator received 120 duly filled questionnaires. The filled questionnaires were carefully checked and scrutinized. Out of 120 questionnaires, 18 questionnaires are not usable. Finally 102 questionnaires were used for the study. The collected data were analysed by the SPSS Software package.

IV. Objectives of the Study

The research main of the study was to analyse the awareness and user pattern of electronic resources by the doctoral research students of Central University of Tamil Nadu, Thiruvavur.

Other objectives were:

1. To find out the level of awareness of e-resources among the doctoral scholars.
2. To find out the frequency and place of using electronic resources by the users.
3. To find out the purpose and preference of electronic resources for their study/research
4. To determine the use pattern of e-resources by the doctoral research scholars.
5. To know the required user education programs for usage of electronic resources.
6. To examine the reasons and non-reasons for using electronic resources by the doctoral research scholars.
7. To identify the problems faced while accessing the electronics resources.

V. Scope of the Study

The present study has been taken to analyse the awareness and use pattern of electronic resources by the doctoral research scholars of Central University of Tamil Nadu, Thiruvavur. The study included all the departments i.e. humanities, social sciences, physical sciences, biological sciences, mathematical sciences and languages are included in the study.

VI. Statement of the Problem

Information and communication technology has well spread in all the fields especially in education and research areas. Today electronic resources have played vital role research to enhance knowledge and development. In the electronic era the numbers of sources are available on the internet i.e. open sources as well commercial electronic resources. As millions of electronic resources literature was available in different fields of research, these electronic resources are how to use and how aware of the research scholars and these electronics resources are fulfil their requirements. Keeping the view of reasons, the investigator selected research on “*Awareness and Use pattern of Electronic Resources by Doctoral Research Scholars Community of Central University of Tamil Nadu, India: A Study*”

VII. Analysis and Data Interpretation

Survey method was adopted to collect the data through questionnaires from the respondents to examine the Awareness and Use pattern of Electronic Resources by Doctoral Research Scholar's Community. Obtained data was coded and tabulated by using MS excel sheet. Later the tabulate data was analysed by using the SPSS software package for simple analysis.

Table – 1: Demographic Characteristics of the Respondents

Gender	No of Scholars (N=102)	Percentage %
Female	45	44.1
Male	57	55.9
Total	102	100
Age	No of Scholars (N=102)	Percentage %
Below 25	8	7.8
25 - 35	53	52
35 - 45	26	25.5
45 - 55	15	14.7
Total	102	100
Departments	No of Scholars (N=102)	Percentage %
Basic & Applied Sciences	8	7.8
Behavioural Sciences	5	4.9
Commerce & Management	9	8.8
Education & Training	8	7.8
Fine & Performance Art	4	3.9
Mathematics & Computer	12	11.8
School of Communication	6	5.9
School of Erath Sciences	7	6.9
School of Legal Studies	4	3.9
School of Life Sciences	14	13.7
School of Technology	7	6.9
Social Science & Humanities	18	17.7
Total	102	100

From table 1 above, of the 102 participants, 45(44.1%) were female, while 57 (59.9%) were male, and 53 (52%) were highest in the age group of 25 to 35 year, and 26 (25.5%) were in the age group of 35-45 years, 15 (14.7%) were in the age group of 45 to 55 years, and those who from 25 years below 8 (7.8%) are the least represented, majority of scholars 18 (17.7%) participated from social sciences & humanities department and least scholar 4 (3.9%) participated from fine & performance arts.

Table 2: Awareness on E-Resources

Options	No of Scholars (N=102))	Percentage %
Yes	35	34.3
Partially Known	22	21.6
Well Known	27	26.5
No	13	12.7
Can't say	5	4.9
Total	102	100

Table 2 those that mentioned awareness on e-resources were asked to indicate that highest 35 (34.3%) were most aware of e-resources, 22 (21.6%) were said that partially known, 27 (26.5%) were well known about e-resources, only 13 (12.7%) said 'No', and least 5 (4.9%) research scholars mentioned 'Can't say'. Based on the above table most of the university research scholars are well aware of electronic resources provided by the central library.

Table 3: Who Aware of E-Resources

Who made of awareness	No of Scholars (N=102)	Percentage %
Library Professionals	13	12.7
Library Website	22	21.6
Friends	11	10.8
User Education Programs	27	26.5
Social Media	8	7.8
Seminars/Workshops	21	20.6
Total	102	100

Awareness on e-resources is most important for research scholars and asked the scholars who are aware of e-resources. Table 3: clearly indicated that the most of the scholars 27 (26.5%) were aware by user education programs, 22 (21.6%) were by library websites, 21 (20.6%) were by seminars/workshops/conferences. 11 (10.8%) were aware by friends and 8 (7.8%) were aware by social media. It was clearly indicated that user education programs play a major role in the awareness of e-resources. So library professionals should conduct user education/awareness programs frequently.

Table 4: Access place of E-Resources

Access Place	No of Scholars (N=102)	Percentage %
Central Library	49	48
Dept. Library	31	30.4
Hostel/Home	22	21.6
Cyber Café	0	0
Total	102	100

Convenient place is most important to increasing the access of e-resources. Table 4: show that the majority of research scholars 49 (48%) were accessed e-resources at central library, 31 (30.4%) were accessed at departmental library, 22 (21.6%) were accessed at hostel/home and no scholars are not accessed at cyber café. It means cyber care is not a convenient place for access to e-resources. It revealed that the central library is a hot spot of access to e-resources.

Table 5: Frequency of use of E-Resources

Frequency	No of Scholars (N=102)	Percentage %
Daily	38	37.3
Weekly	28	27.5
Fortnightly	22	21.6
Monthly	10	9.8
Occasionally	4	3.9
Total	102	100

According to the table 5 the frequency of use of e-resources is clearly shows that 38 (37.3%) respondents use e-resources daily, 28 (27.5%) scholars use weekly, 22 (21.6%) uses fortnightly, 10 (9.8%) uses monthly, and only 4 (3.9%) researches uses electronic e-resources occasionally.

Table 6: Device used for accessing the E-Resources

Device used	No of Scholars (N=102)	Percentage %
Desktop	48	47.1
Laptop	38	37.3
Smart Phone	11	10.8
iPod	5	4.9
Total	102	100

The tabulated data in table 6: shows that the majority of the research scholars used desktop computers 48 (47.1%) to access e-resources followed by 38 (37.3%) that used laptops, 11 (10.8%) used smart phones while 5 (4.9%) used iPod.

Table 7: Awareness on type of E-Resources (Multiple Responses)

Aware of type of E-Resources	No of Scholars	Percentage %
E-Journals	95	93.1
E-Books	87	85.3
E-Thesis/ Dissertations	30	29.4
Bibliographic Databases	38	37.3

CD-ROM Databases	54	52.9
E-Consortium	54	52.9
E-Blogs	13	12.7
E-Databases	69	67.6
E-Newspapers/Magazines	11	10.8
E-Encyclopaedia/Dictionaries	12	11.8
OPAC (Online Public Access Catalogue)	61	59.8
E-Standards/Reports	15	14.7

The question asked respondent awareness on which type of e-resources. Table 7 show that Majority of the scholars 95 (93.1%) aware on e-journals, followed by 87 (85.3) aware on e-books, 69 (67.6) aware on e-database, 54 (52.9%) aware on CD-ROM databases and E-consortium both equally represented, 38 (37.3%) scholars aware on bibliographic databases, 15 (14.7%) aware on E-standards/reports, 13 (12.7%) aware on E-Blogs, least aware on E-newspapers/magazine 11 (10.8%).

Table 8: Best feature of E-Resources

Best Feature	No of Scholars (N=102)	Percentage %
Full text access	23	22.5
User Friendly	15	14.7
Relevant to subject	15	14.7
Multi-Disciplinary subjects	21	20.6
More Reliable Options	18	17.7
Archival Facility	10	9.8
Total	102	100

Table 8 results revealed that regarding the opinion on best features of e-resources, majority of the scholars 23 (22.5%) said that full text access is the best feature in e-resources, followed by 15 (14.7%) said that user friendly, 15 (14.7%) relevant to subject, 21 (20.6%) multi disciplinary subjects, 18 (17.7%) more reliable options available in e-resources, while 10 (9.8%) scholars said that the archival facility is the best feature in e-resources.

Table 9: Downloading/reading/browsing e- article per month

Article downloading	No of Scholars (N=102)	Percentage%
Below 10	4	3.9
10-15	42	41.3
15-20	23	22.5
20-25	23	22.5
Above 25	10	9.8
Total	102	100

The data shown in table 9 a ratio of 42 (41.35%) research scholars from 10-15 articles downloading/reading/browsing per month, 23 (22.5%) downloading from 15-20 articles per month, 23 (22.5%) downloading /reading/browsing from 20-25 articles per month, while 10 (9.8%) scholar downloading articles from above 25.

Table 10: Purpose of using E-Resources

Purpose of use	No of Scholars (N=102)	Percentage %
Up to date knowledge	28	27.5
Article/book/chapter	19	18.6
Seminar/workshop/conference	18	17.6
Academic/Teaching/Research	29	28.5
Others	8	7.8
Total	102	100

The question asked to the respondents regarding to purpose of use of electronic resources table 10 indicate that the majority of the research scholars 29 (28.5%) were using e-resources for academic/teaching/research purpose, followed by 28 (27.5%) were using to up to date knowledge, 19 (18.6%) were using for writing article/book/chapter purpose, 18 (17.6%) were using e-resources for the purpose of attending seminar/workshop/conference purpose. Those using e-resources for other purpose 8 (7.8%) were the least.

Table 11: Prefer media for access of E-Resources

Preferred Media	No of Scholars (N=102)	Percentage %
Electronic	35	34.4
Print	9	8.8
Both	54	52.9
Can't say	4	3.9
Total	102	100

Table 11 data revealed that regarding the question preferred media for access of e-resources that the majority of the scholars 54 (52.9%) were preferred both electronic and print media, 35 (34.5%) preferred electronic media while 9 (8.8%) preferred print media, while 4 (3.9%) were not interested to say.

Table 12: Preferred browser for access of E-Resources

Preferred Browser	No of Scholars (N=102)	Percentage %
Google Chrome	68	66.7
Mozilla Fire fox	18	17.6
Safari	11	10.8
Internet Explorer	4	4.9
Total	102	100

The preference borrower for access of e-resources is as shown in table 12. The majority of scholars 68 (66.7%) preferred Google Chrome, 18 (17.6%) preferred Mozilla Firefox, 11 (10.8%) preferred Safari web browser, while 4 (4.9%) preferred Internet Explorer for browsing e-resources. The results clearly indicated that Google Chrome is a more popular web browser.

Table 13: Preferred Content/Part/Section for reading E-articles

Preferred Content/part	No of Scholars (N=102)	Percentage %
Abstract	17	16.7
Full Text	51	50
Introduction	13	12.7
Findings	13	12.7
Conclusion	4	3.9
Bibliography	4	3.9
Total	102	100

Table 13: results show that majority of the research scholars 51 (50%) were preferred full text content/part/section while reading the e-articles, 17 (16.7%) were preferred abstract section, 13 (12.7%) preferred Introduction section, 13 (12.7%) preferred finding section, 4 (3.9%) preferred both conclusion and bibliography section/content/part.

Table 14: Preferred search technique used for E-resources

Search Technique	No of Scholars (N=102)	Percentage%
Key word Search	28	27.5
Field Search	28	27.5
Phrase Search	27	26.5
Boolean Search	19	18.5
Total	102	100

Research Scholars use different search techniques while using e-resources, table 14 data shows that 28 (27.5%) scholars use both keyword and field search technique equally, 27 (26.5%) were use phrase search technique, 19 (18.5%) preferred Boolean search for searching e-resources.

Table15: Impact on e-resources has effected to use of print resources

Impact on E-Resources	No of Scholars (N=102)	Percentage %
Strongly Agree	43	42.6
Agree	32	31.7
Agree to some extent	18	17.8
Disagree	6	5.9
Strongly Disagree	3	2
Total	102	100

E-resources and print resources are different type of nature based on convenient access. The question asked to research scholar's opinion on impact on e-resources effect to use of print resources. Table 15 explore that highly 43 (42.6%) strongly agree, 32 (31.7%) agree, 18 (17.8%) agree to some extent, 6 (5.9%) disagree and 3 (2%) strongly disagree with this statement. So, e-resources are very impactful on print resources.

Table 16: opinion on quality of information available of E-Resources

Quality of Information	No of Scholars (N=102)	Percentage %
Very High quality	17	16.7
High quality	44	43.1
Somewhat quality	39	38.2
Poor quality	2	2
Very poor quality	0	0
Total	102	100

The question asked the participants regarding the quality of information available in e-resources in the central library. Table 16: results revealed that majority of the research scholars 44 (43.1%) rated central library e-resources as high quality, 39 (38.2%) said that as somewhat quality, 17 (16.7%) said their opinion as very high quality, 2 (2%) poor quality information available in e-resources, while very poor quality option as zero represented by the scholars.

Table 17: Reasons for using of E-Resources

Reason for using	No of Scholars (N=102)	Percentage %
Advanced search facility	18	17.6
Archival/back-volumes	16	15.7
Up-to-date knowledge	30	29.4
Easy to download/storage	12	11.8
Relevant to subject	12	11.8
Time saving	14	13.7
Total	102	100

There are so many reasons for using e-resource, based on this statement we asked the research scholars what are the major reasons for using e-resources. Table 17 results revealed that majority of the scholars 30 (29.4%) as up to date knowledge major reason for using e-resources, 18(17.6%) as advanced search facility, 16 (15.7%) as archival/back volume facility is a reason, 12 (118%) as both easy to download/storage and relevant to subject equally opted, 14 (13.7%) scholars used e-resources for time saving reason.

Table 18: Reasons for non-using of E-Resources

Reason for Non-using	No of Scholars (N=102)	Percentage %
Time consuming	20	19.6
Lack of search/IT skills	11	10.8
Interested on print format	18	17.6
Eye Irritation	38	37.3
Insufficient computers	9	8.8
Inadequate of databases	6	5.9
Total	102	100

Table 18: data explored that majority of the research scholars 38(37.3%) eye irritation is main barrier for non using of e-resources, whereas, 20 (19.6%) time consuming is main reason for non using, 11 (10.8%) as lack of search/IT skills, 18 (17.8%) interested in print format as major reason for non using, 9 (8.8%) as insufficient computers followed by 6 (5.9%) inadequate databases as a reason for non using of e-resources. It was slightly indicated that eye irritation is a major barrier for non-using e-resources.

Table 19: Satisfactory level of using E-Resources

Satisfactory level	No of Scholars (N=102)	Percentage %
Satisfied	49	48
Highly Satisfactory	22	21.6
Average	26	25.5
Below Average	5	4.9
Poor	0	0
Total	102	100

Table 19: specifies the responses regarding satisfactory level of using e-resources. Most of the research scholar 49 (48%) satisfied with e-resources, followed by 26 (25.5%) average satisfied with e-resources, 22 (25.5%) highly satisfied with e-resources, 5 (4.9%) below average satisfied with e-resources, 0% responses as poor with e-resources.

Table 20: Problems encountered to access of E-Resources

Problems with accessing E-Resources	No of Scholars (N=102)	Percentage %
Publishers/Vendors Restrictions	14	13.7
Low Internet Bandwidth	17	16.7
Lack Search/IT Skills	7	6.9
Irrelevant information	36	35.3
Power cut Disturbance	11	10.8
Navigation Problem	17	16.7
Total	102	100

Research scholars faced different problems while using e-resources in the university library. Table 20 results revealed that major problems that are irrelevant information faced by 36 (35.3%) respondents, both low internet bandwidth and navigation problems equally faced by 17 (16.7%) respondents, 14 (13.7%) scholars are interrupted by publishers/vendors restrictions, 11 (10.8%) scholars faced by power cut, 7 (6.9%) scholars feel that lack of search/IT skills as a problem to access the e-resources.

Table 21: User training program is require for optimum utilization of e-resources

User Education Program	No of Scholars (N=102)	Percentage %
Agree	35	34.3
Strongly Agree	45	44.1
Disagree	7	6.9
Strongly disagree	7	6.9
Can't say	8	7.8
Total	102	100

Table 21 explore the results that majority of the scholars 45 (44.1%) were strongly agree that the user training/education programs require for optimum utilization of e-resources, followed by 35 (34.1%) were agree, 7 (6.9%) scholars disagree and strongly disagree both equally, 8 (7.8%) scholars said their opinion as can't say.

VIII. Major findings of the study

- The major findings revealed that the doctoral research scholars of Central University of Tamil Nadu were aware of the electronic resources available in the central library.
- Majority of the doctoral scholars 34.3% were aware of electronic resources available in the central library.
- Highest percent 26.5 % respondents were aware of electronic resources by the user education/training programs.
- Most of the respondents 48% access the electronic resources at the central library.
- 37.3% scholars used electronic resources daily, while 3.9% used electronic resources occasionally.
- Majority of the respondents 47.1% used the desktop as a most favourable device.
- Most of the scholars 93.1% were aware of electronic journals provided by the central library.
- Majority of the scholars 28.5% used electronic resources for the purpose of academic/research/teaching.
- 66.7% research scholars preferred Google Chrome for browsing electronic resources.

- Majority of the scholars 42.6% strongly agree that electronic resources had been affected to use the print media.
- Most of the scholars 43.1% said their opinion that the high quality of information was available in electronic resources provided by the library.
- Majority of the respondents 29.4% used the electronic resources for up to date knowledge.
- The satisfactory level with using electronic resources ratio is 48%.
- Most of the respondents 35.3% irrelevant information in electronic resources was the main hurdle.
- Majority of the scholars 44.1% needed user education/training for optimum utilization of electronic resources.

Conclusion

The survey confines the use pattern of electronic resources among the doctoral research scholar of Central University of Tamil Nadu, Thiruvarur. The present study clear indicates that the University of Scholars are more aware of available different type of electronic information resources provided by the central library. It also revealed that the majority of research scholar said that the user education/training programs highly increase the optimum utilise the existing electronic resources. The Central University of Tamil Nadu has provided the most useful and high quality of electronic resources for students and teaching community for the aim of high quality of research and education. Today electronic resources are playing a key role in higher education intuitions especially in the field of research, electronic resources including open educational resources are more useful for students and research scholars for hunching the academic heights. Higher educational institutes are providing high quality of electronic resources for the purpose of quality and quantity research. But unfortunately, the usability of electronic resources is very low as per the user statics. But we can easily overcome these barriers with the help of innovative thoughts. Higher educational universities should conduct user education programs/training regularly throughout the academic year. Library professionals and faculty members should encourage the scholars to utilize the electronic resources for their academic and research requirements. The Central University of Tamil Nadu has provided the most useful and high quality of electronic resources for students and teaching community for the aim of high quality of research and education.

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