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USE OF E-RESOURCES IN SPECIAL LIBRARIES: A CASE STUDY OF NATIONAL CENTRE FOR ANTARCTIC AND OCEAN RESEARCH (NCAOR), GOA, INDIA.

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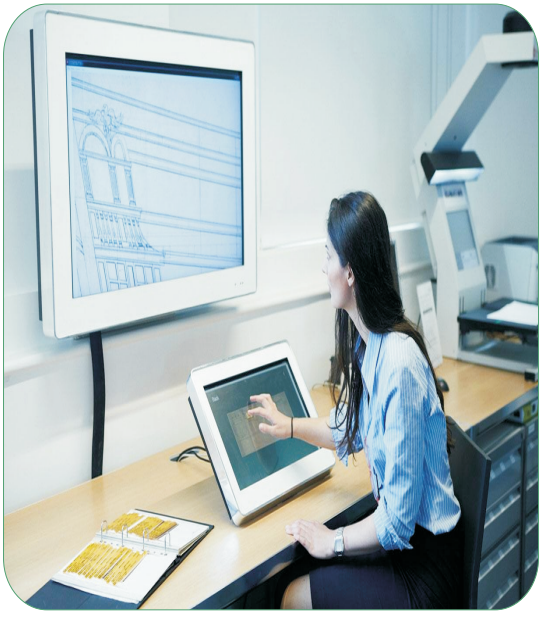

ABSTRACT

Electronic information resources metamorphosed the scholarly communication. The present study aims to assess the user experience and perception of using different types of electronic information sources (EIS) by the Ocean research scientists at the National Centre for Antarctic and Ocean Research (NCAOR), Goa. The survey was carried using questionnaire as a tool to gather data. The results reveal that the scientists under study prefer e-resources and majority of them are familiar with their access and use.

KEYWORDS :*E-resources, Special libraries, Scientists, NCAOR, Goa, Oceanography .*

1.INTRODUCTION

Electronic resources have played vital role in research organizations. E-resources are not only the necessity of the time but also have become the face value of any research institution. The concept of the library is changing very fast due to the impact of e-resources. Now libraries not only have printed material but also digital resources. The technology has forced the library to digitize information. Electronic resources have the advantage of being more current, and sometimes more comprehensive compared with print equivalents. Major journal publishers such as Elsevier, Springer, J-stor and Wiley are now making hundreds of individual titles available online back to their very first issues.

Even 20 years ago it was clear that print journal volumes have a much greater potential for clearance of needed shelf space (Veenstra, 1987). The dawn of e-resources has significantly changed the way of accessing the conserved information in databases, and provided excellent speeds for retrieving it. During the last few decades growth and demand of electronic information has been multiplied many times.

The EIS provides online access to information to overcome problems of distributed geographical location or finances. They also provide access to current information as these are often updated. Access to information is important for individual scientists, groups of scientists or the academic community and research institutions for

execution of their programmes and research projects. With the development ICTs the activities, operations and services performed manuallyare now automated enhancing the role and responsibility of librarians in linking the resources and services of the libraries with their uaers. This is evident from the literature review and few papers that dealt with issue are reviewed here.

2. LITERATURE REVIEW

A study by Voorbijand Hilde (2006) has concluded that, at least for scientists and social scientists, electronic journals have become indispensable, less than ten years after publishers started to produce electronic versions of their traditional journals. The study also found that electronic journals have a profound effect on the information behavior, varying from methods to become aware of relevant articles to benefits for research.

Moghaddam, Galyani and Talawar, (2008) through their study have showed a growing interest in electronic journals among the users at IISc. Electronic journals were mostly used for research needs and PDF was the most preferred format. The fact that users have free access to electronic journals at all hours from their own computers seems to be the most appealing feature.

Haridasan and Khan (2009) found that respondents are aware of the e-resources (such as e-books, e-journals, e- encyclopedias, e-theses, CD-ROM databases, e-mail, internet and the OPAC). A large number of research scholars and faculty members are using these e-resources for their research work. Many faculty members strongly agreed with the necessity for computer and internet literacy to access information. A majority of users were satisfied with the e-resources available at the NASSDOC library.

Chetan Sharma, Lakhpat Singh, and Ritu Sharma.(2011) found that majorities of the researchers are well aware of the various e-resources in their respective field and confidently use them regularly. E-Journals are the most preferred e-resource among the respondents. They seek e e-resources to perform their routine duties, i.e. teaching, research. Major problems faced by the respondents in accessing e-resources are slow speed of internet, difficulty in retrieving contents and poorly designed web sites.

Findings of a survey by Sunil Tyagi (2012) showed that special libraries possessed useful online journals and databases for the scientific community. The data scanned and preserved in document management software play an important role to access relevant information. Awareness among the users about the availability of online journals was found highly satisfactory. Online journals were mostly used for research needs and similarly pharmacy and pharmacology discipline-based journals used widely. The E-resources are found to be better sources for accessing current and comprehensive information.

The above studies reveal the importance, extent and pattern of use made of e-resources in special libraries and R&D libraries in India.

3.OBJECTIVES OF STUDY

With the background of literature review it was felt that there is need to assess the access and use of e-resources by scientists in research institutes of India and National Centre for Antarctic and ocean Research was selected for the purpose of a detailed study. The main objectives of the study are to:

- Study the user perception of using of different types of electronic information sources by The Ocean research scientists,
- Analyze the different purposes for which the E-sources are used by the scientists;

• Identify the constraints faced by the scientists while using the E-resources in the Library and Information centre;
• Know the preferences for print journals as well as e-journals; and
• Assess the satisfaction level of the users with the available access to E-resources in the Centre.

4. NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH (NCAOR), GOA

In 1998-99, the Antarctic Study Centre (ASC) at Goa, an attached office, was converted into an autonomous society w.e.f. September 1998 and renamed as National Centre for Antarctic & Ocean Research (NCAOR) in May 1999. The Centre which started as logistics provider for Antarctic missions, has now becomes the nerve Centre for polar research guiding scientific and research activities on both the poles.

LIBRARY AND INFORMATION CENTRE, NCAOR.

NCAOR library played vital role in R&D activity of polar research. It is only the library in India hold the information on Antarctica Arctic an3333d the Southern Ocean. NCAOR library offer high quality online information resources and SDI services. NCAOR library having resources print and digital form. All the resources such as Books, e-books, e-journals, current news and all Antarctic expedition reports, NCAOR publications are now available on a single platform in the form of online NCAOR library website. At present library is having total 2025 books, 7 scientific Journals, 9 magazines, 52 CD's , 1899 Maps related to NCAOR, Indian Ocean, Arctic & Antarctic, etc.

5. METHODOLOGY, ANALYSIS OF DATA AND FINDINGS OF STUDY

The present study was conducted using questionnaire as data gathering tool. Purposive sample technique was adopted to collect data from the scientists. A total number of 70 questionnaires were administered among the users of the Library and Information Centre, NCAOR under study. Out of which 43(61.42%) questionnaires were received back duly-filled in. The data collected were tabulated and analyzed. Statistical techniques of percentage of respondents have been mainly used to analyze the collective data.

Table 1. Sample population

Professional status	No. of questionnaires distribution	Response (%)
Scientists	70	43 (61.42)

5.1. Knowledge of e-resources: Awareness of available electronic resources is the basis for its access and utility. Hence the scientists were asked to indicate their level of awareness of electronic resources in their field of study and research.

Table 2. Electronic resources collection

Electronic resources N=43	
Yes	43 (100.00)
No	0 (0.00)
Total	43 (100.00)

From the above table it is clear that cent-percent scientists are aware about e-resource

collection in their libraries, it can be observed that all the scientists are familiar with the developments of digital environment and are catching up to the changes from traditional print environment to electronic format.

5.2. Frequency of use: How frequently the scientists use e-resources was assessed and responses were displayed in the following table.

Table No: 3 Frequency of use of e-resources

Frequency	Number of Responses (%)
Every day	21 (48.3)
Thrice a week	5 (11.6)
Once a week	8 (18.6)
Once a month	9 (20.9)
Total	43 (100.00)

The above tables discusses about the use of e-resources available in institutional library by the scientists. Highest percent of the scientists (48%) are using e-resources every day and above 18 percent used them once a week. Nearly 21 percent and 11 percent of the scientists are using e-resources once in a month and thrice a week respectively.

5.3. Purpose of using e-resources: The scientists may seek information from e-resources for various purposes. To assess their priorities a question was asked and the results have been tabulated below.

Table No: 4 purposes for using electronic - resources

Purpose of use	Most	Often	Sometime	Somewhat	Least	Total (N=43)
Research needs	23 (53.5)	13 (30.2)	7 (16.3)	0 (0.0)	0 (0.0)	43 (100.00)
Professional achievement	10 (23.3)	7 (16.3)	13 (30.2)	7 (16.3)	6 (14.0)	43 (100.00)
Education	9 (20.9)	15 (34.9)	9 (20.9)	4 (9.3)	6 (14.00	43 (100.00)
Win awards	7 (16.3)	6 (14.0)	15 (34.9)	6 (14.0)	9 (20.9)	43 (100.00)
Current information	19 (44.2)	6 (14.0)	15 (41.9)	0 (0.0)	0 (0.0)	43 (100.00)

The opinions of scientists with regard to the use of electronic resources were collected on a five-point scale. Table 4 clear idea of the order of preference of use purposes that majority of scientists (83.7 per cent) use e – resources are most / often use for “research needs”, further most / often use “ education and current information” purposes (58.8%) and (58.2%) respectively. Sometimes scientists

are use e-resources for win awards and professional achievement purposes. (34.9%) and (30.2%) respectively. It can be inferred that scientists seek e-information primarily for research work followed by education and current information in scientific field.

5.4. Preference of form of literature: The scientists are having access to print as well as electronic publications. To assess their preference between the two data gathered and displayed below.

Table 5. Format preference for accessing information

Preferred format to seek information	Number of Responses (%) (N=43)
Print	10 (23.3)
Electronic	11 (25.6)
Both	22 (51.2)
Total	43 (100.00)

The analysis of scientists on preferred format reveals that highest percent of scientists surveyed are prefer to use information in both electronic and print form (51%). When compared with those preferring print form (23%), the percent of those preferring electronic form of information is slightly more (25%). It can be inferred that most of the scientists prefer using both the forms of information depending on the necessity and availability of information in a particular format.

Table 6. Frequency of accessing online journals

Frequency of accessing	Number of responses (%)
Daily	14 (32.6)
Weekly	11 (25.5)
Bi weekly	10 (23.3)
Monthly	8 (18.6)
Bimonthly	0 (0.0)
Total	43 (100.00)

The above table shows that 32.6% of scientists are using online journals daily, 25.5% use online journals in a week. 23 percent of the scientists are using them bi- weekly and very few (18.6%) of scientists use online journals monthly only when needed.

5.5. Frequency of use of different formats: The e- content is made available in different formats. The table below displays the preferred formats for scientists under study.

Table 7. Frequency of using different formats of electronic/ online journals

Type of format	Most	Often	Sometime	Somewhat	Least	Total (N=43)
PDF	17 (39.5)	9 (20.9)	5 (11.6)	6 (14.0)	6 (14.0)	43 (100.00)
HTML	16 (37.2)	10 (23.3)	7 (16.3)	8 (18.6)	2 (4.6)	43 (100.00)
ASCII	3 (6.9)	4 (9.4)	9 (20.9)	13 (30.3)	14 (32.5)	43 (100.00)
Ms Word	11 (25.6)	12 (27.9)	11 (25.6)	4 (9.3)	5 (11.6)	43 (100.00)
Post Script	8 (18.6)	5 (11.6)	3 (6.9)	8 (18.6)	19 (44.1)	43 (100.00)
La TeX	4 (9.3)	7 (16.3)	8 (18.6)	10 (23.3)	14 (32.5)	43 (100.00)

The above table shows that "most" preferred choice of electronic journal in PDF format (39.5%),the second and third priority gives HTML and Ms-Word format is "most" and "often" used (37.2%) and (27.9%) respectively , and that the , LaTeX, ASCII and PostScript formats are the "least" desired by the scientists. This may be because most of the electronic journals were easily available in PDF or HTML. It seems that PDF and HTML are the two most preferred formats with publishers, so users of electronic journals have to accept these two formats. In addition, reader software for the PDF format and browser software for the HTML format are free. When free software is available, generally users are not ready to pay money for other formats. PDF uses less computer memory and the look of the original article is maintained; HTML is also platform-independent, and perhaps this is the reason for users preferring it. It can be inferred that scientists most preferred format in PDF and often preferred HTML and least preferred LaTex.

5.6. Time for search: Searching and getting the relevant information is the major task in e-environment as it consumes more time. How much time the scientists under study spend to gather information is displayed below.

Table 8. Time needed to find relevant information from e-resource collection

Time	Number of Responses (%)
1 hour	26 (60.5)
1 to 2 hours	9 (21.0)
2 to 3hours	0 (0.00)
More than 3 hours	8 (18.6)
Total	43 (100.00)

An examination of table 8 reveals that one hour time is enough for a majority (60 %) of the

scientists to find relevant material from e-resources, while 21 per cent felt that they need 1-2 hours time. This finding can give further push for increased dependence on e-resources as it reveals that it takes relatively less time to find the need material from e-sources.

Table 8.1 Time taken to access and / or download the articles online

Time	Number of responses (%)
<10min	20 (46.5)
10-20 min	13 (30.2)
20-30 min	10 (12.6)
30-40 min	0 (0.0)
Total	43 (100.00)

Time taken to access/download online content was assessed by asking the scientists to select any of the four time frequencies. The results were tabulated in table 8.1. As is evident, 46.5 per cent of the scientists reported that it takes less than 10 minutes to access/download online content while 30.2 % reported that they took 10-20 minutes time for the same purpose. Very few people (12 %) said that it typically takes 20-30 minutes to download the needed online content. As all these research laboratories are equipped with special leased lines net connection, the users are able to access online content relatively faster.

5.7. Search techniques: There are different search options in online environment to access the e-resources. The preferred search option of respondents was assessed and results displayed in the following table.

Table 9. Use of different search strategies for online information

Search strategy	Yes	No	Total(N=43)
Key word search	29 (67.4)	14 (32.6)	43 (100.00)
Title search	21 (48.8)	22 (51.2)	43 (100.00)
Feather search	23 (53.5)	20 (46.5)	43 (100.00)
Subject search	31 (72.1)	12 (27.9)	43 (100.00)

The table 9 discloses the search strategy employed by the scientists during the course of their search for e-resources. It is seen that 72 per cent of the scientists which constitute follow the “subject” searching method which is highly significant. Those who use “key word” searching account for 67 per cent, where as feather” searching are used 53 percent of the scientists. And nearly 49 percent of the scientists used “title” as a search term. Hence it is learned that the Ocean Scientists keep required knowledge on the information-searching technique and skill and adhering ‘subject and key word’ in surfing e-resources predominant among all the search strategies.

5.8. Impact of e-resources in information gathering: The method of information gathering

transformed from shelf to virtual. The opinions of scientists under study on the changes in information gathering are gathered and presented below.

Table 10. Impact of electronic sources on information gathering

Kind of impact	Responses (N=43)		
	Yes	No	Total
Easier information use from e-resources	35 (81.4)	8 (18.6)	43 (100.00)
Retrieval of articles/information	23 (53.5)	20 (46.5)	43 (100.00)
Searching for relevant information using scientific databases	33 (76.8)	10 (23.2)	43 (100.00)
Synthesizing scientific information	22 (51.2)	21 (48.8)	43 (100.00)
Learning about current trends in the field	29 (67.5)	14 (32.5)	43 (100.00)
Verifying facts	31 (72.1)	12 (28.9)	43 (100.00)
Verifying citations	19 (44.2)	24 (58.8)	43 (100.00)

Table10summarizes the influence of features of electronic sources on information gathering. A majority of (81.4%) scientists felt that using electronic sources is easier to find needed information and it leaves more time to complete other tasks. It can also be observed that (76.8 %) scientists felt that electronic resources are particularly useful it allows access scientific databases. Further, 72.1 % of scientists believed that electronic sources allow one to verify facts, 67.5% of the scientists felt that electronic sources give scope for learning current trends in the field. Interestingly, Retrieval of articles/information which is widely believed to be a positive feature of electronic sources is turned out to be an attractive feature for 53.5 % of the scientists. Further, 51 percent reported that electronic sources help them to gather and synthesize the information for arriving at conclusions or insights and 44 % felt those sources are useful for them in verifying citations.

5.9. Opinion on availability and accessibility: Knowledge about the opinions of users on the availability and accessibility of e-resources through their institution library helps to assess the strengths and weaknesses of the system. Hence the sample was asked to give their opinion on these aspects and the responses are tabulate below.

Table 11. Opinions on the accessibility / availability of electronic journals

Statement	Strongly agree	Agree somewhat	Disagree somewhat	Strongly disagree	Total
24 Hrs Available	34 (79.1)	2 (4.7)	7 (16.3)	0 (0.0)	43 (100.00)
Desktop availability	18 (41.9)	1 (2.3)	8 (18.6)	16 (37.2)	43 (100.00)
Free access	14 (32.6)	9 (20.9)	8 (18.6)	12 (27.9)	43 (100.00)
Depend on network	16 (37.2)	13 (30.2)	10 (23.3)	4 (9.3)	43 (100.00)
Need special Equipment	13 (30.2)	8 (18.6)	10 (23.3)	12 (27.9)	43 (100.00)
Require Training	12 (27.9)	10 (23.2)	12 (27.9)	9 (20.8)	43 (100.00)

Scientists were requested to rate the availability of online journals on a 4 point scale- strongly agree/strongly disagree continuum and these results were summarized in table 11. A great majority of the scientists (79%) strongly agreed that online journals are available at any time of the day. Combined together all those strongly agreed and agreed somewhat 67 percent of the scientists felt that availability and accessibility of electronic journals depends on the particular network. 42 percent felt that accessibility depends on the desktop availability significant percent of them also expressed the need for free access (32%), need for special equipment (30%) and need for training in the use e-resources (nearly 30%). No such tilt towards either agree or disagree side is observed with regard to require training as users were divided across the rating continuum. Of the six accessibility features of online journals two are encouraging (24 hrs availability and Depend on network) and four are limiting factors (desktop availability, free access, need special equipment and require training). Analyses of these responses reveal that majority of the scientists strongly agreed/agreed with both the encouraging factors and limiting factors, except require training.

5.10. Level of satisfaction with e-resources: Satisfaction is the ultimate measure to assess the use of any material or product. The level of satisfaction of scientists regarding various types of information sources in e-format is presented below.

Table 12. Level of satisfaction

Electronic resources	Very satisfaction	Satisfaction	Average	Less Satisfaction	No satisfaction	Total
E-books	20 (46.5)	7 (16.3)	4 (9.2)	7 (16.3)	5 (11.6)	43 (100.00)
E-journals	19 (43.7)	10 (23.0)	6 (13.1)	5 (11.6)	3 (6.9)	43 (100.00)
Databases	18 (41.9)	8 (18.6)	3 (7.0)	7 (16.3)	7 (16.3)	43 (100.00)
E-Thesis	7 (16.2)	19 (43.7)	**9 (20.9)**	6 (13.1)	2 (4.6)	43 (100.00)
E- proceedings of conference	16 (37.2)	5 (11.6)	22 (51.2)	0 (0.0)	0 (0.0)	43 (100.00)

Table 12 summarizes the frequencies of the scientists' level of satisfaction with regard to the available with electronic resources. A careful examination of the frequencies reveals that more than 50 per cent of the scientists are found to be very much satisfied with all five types of electronic resources.Among those scientists very much satisfied with the e-resources, those who opted e-books are more (46%) followed by those who preferred e-journals (43%). Among those who expressed satisfaction about the e-collection, those who opted for e-thesis are more (43%) compared to others.

5.11. Training in use of e-resources: Information literacy is the buzz word today to educate and train the users of e-environment. To find out scientists experience and opinion and having special training in e-resources use the data was gathered and presented in the following table.

Table 13. Opinion on frequency of conducting training / instruction programmes

Frequency	Number of responses (%)
Once	8 (18.6)
Twice	4 (9.3)
More than 2 times	1 (2.3)
None	30 (69.8)
Total	43 (100.00)

The above table 13 indicates that nearly 70% of the scientists not take any training to access/usingelectronic resources as most of scientists are having self awareness of e-resources, followed by 18.6% preferred training once time, very few 9.3% of scientists are opined training more than two times.

6. CONCLUSION:

The findings of the present study on use of e-resources in special libraries with special reference to the scientists of NCAOR focused on various aspects of use pattern of e-resources in all forms. Being scientists, they are depending on these resources for the purpose of research project on hand. They preferred to use scientific information available in both print and electronic form. Mostly they are accessing documents in PDF and HTML formats. While searching for information mostly they followed subject wise search of online databases. Hey are well familiar with online journals and are accessing them daily. Majority of the scientists have developed the skills and knowledge in the use e-resources on their own. However to find relevant information e-resources collection, most of them are spending minimum one hour time. But because of the special leased internet connectivity they are able to download required information within ten minutes. Most of them are well aware of both positive factors that facilitate and negative factors that obstruct the accessibility to online resources. Majority of the scientists have accepted that the electronic resources are significantly influencing their information seeking behavior. They are with the opinion that it because easy and electronic form, searching and retrieval because effective and efficient both cost and benefit wise. Access to e-resources helping them current with the latest trends in the concerned field of research. They are now able to measure the quality and impact of their research output on fellow scientists. The survey findings also revealed that the existing electronic information facility at NCAOR is able to satisfy the information requirement of most of the end users.

SUGGESTIONS:

Information, as a key resource of the 21st century became a key driver of markets replacing other resources. The foundation of the economic prosperity of developed countries is not only based on the efficient conversion of information to knowledge, but also in applying this knowledge for the creation of new methods, products and processes that are more effective and efficient compared to the existing methods, products and processes . In this context, scientific libraries play a decisive role as a provider of scientific and technical information. The resources and services of Oceanography librariesalso to be planned, designed and offered keeping this vital and noble role in view. Though the finding of the study have not shown any negative aspects of the existing facilities and services, to improve the retrieval efficiency in searching and downloading time the existing network facility needs

improvement in terms of speed and access points.There is also a need to plan an integrated training programme for the users as well as the library staff for an effective utilization of services. A regular feedback from the scientist will also go a long way in improving the library services. Further with the advent of social media; the established principles of scientific communication have dramatically changed. For centuries libraries especially scientific libraries served as single point of access to scientific literature. Because of social media new publication forms have been emerged e.g. scientific wikis, new communication channels, e.g. micro-blogs, or community driven research and publication environments, e.g. Mendeley or ResearchGate.The Oceanography libraries also should exploit the potential of social media not only in the creation of oceanographic information but also its dessemination,sharing and application among the scientists and other faculties working in the field of Oceanography and allied fields.

REFERENCE

1.GalyaniMoghaddam, G., &Talawar, V. (2008). The use of scholarly electronic journals at the Indian Institute of Science: a case study in India. Inter lending & Document Supply, 36(1), 15-29. http://dx.doi.org/10.1108/02641610810856354

2.Haridasan, S., & Khan, M. (2009). Impact and use of e-resources by social scientists in National Social Science Documentation Centre (NASSDOC), India. The Electronic Library, 27(1), 117-133. http://dx.doi.org/10.1108/02640470910934632

3.Sharma, C., Singh, L., & Sharma, R. (2011). Usage and acceptability of e-resources in National Dairy Research Institute (NDRI) and National Bureau of Animal Genetic Resources (NBAGR), India. The Electronic Library, 29(6), 803-816.
Doi: 10.1108/02640471111188024

4.Tyagi, S. (2012). Use of Electronic Information Resources by Scientists in Pharmacopoeia Laboratories of India. Journal of Knowledge & Communication Management, 2(2), 154.
http://dx.doi.org/10.5958/j.2277-7946.2.2.012

5.Veenstra, R.J. (1987). A one-year journal use study in a veterinary medical library, Journal of the American Veterinary Medical Association, 190, 623-626.

6.Voorbij, H., &Ongering, H. (2006). The Use of Electronic Journals by Dutch Researchers: A Descriptive and Exploratory Study. The Journal of Academic Librarianship, 32(3), 223-237. doi:10.1016/j.acalib.2006.02.006

7.www.ncaor.gov.in

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