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USE OF CeRA CONSORTIUM E-RESOURCES BY FACULTY MEMBERS AND RESEARCH SCHOLARS OF PUNJAB AGRICULTURAL UNIVERSITY, LUDHIANA: A STUDY

Amritpal Kaur*, Jagjit Singh**

Abstract *The article examines use of CeRA consortium e-resources by faculty members and research scholars of Punjab Agriculture University, Ludhiana. A well designed questionnaire was used to extract the views of the respondents. A meticulous review of literature was carried out to examine the findings of previous pertinent studies. The results of the study yield precise information about the awareness of e-resources , usage of CeRA, mode of accessibility, fields preferred to access e- resources, purpose for accessing e-resources , area of users interest (CeRA e-journals), preference of publisher to access e-journals, usage of DDR service, number of articles received via DDR service, adequacy of information available through CeRA, Information need satisfaction with e-resources (CeRA), problems faced while accessing e-resources, effect of e-resources, benefits of e-resources over conventional resources.*

Keyword: *CeRA, E-resources, E-journals, User survey, Punjab Agricultural University, Ludhiana*

INTRODUCTION

Today libraries and information centres have become an integral part of academic and research institutions all across the world. In this electronic age, conventional setup is fast getting updated into digital/online system to cater to the needs of users at a large level. Libraries tend to give more importance to electronic resources than the printed ones as far as journals and magazines are concerned (Radhakrishnan and Kumar, 2010). Electronic resources have started gaining importance in libraries. There is an urgent need to develop information resources in electronic form. Even in libraries the information resources like databases, journals, books, patents, dictionaries, standards, encyclopedias, thesauri and others are available in electronic form (Rajanikanta and Ramasesh, 2009). The dawn of e-publishing has really witnessed a drastic change in the mechanism of journal publication, the process of subscription, access and distribution. Moreover, electronic resources have given rise to numerous opportunities and merits than their printed counterparts that include ease of use, wide availability on the internet, shareable nature, hyper-linking facilities to the relevant and related text materials along with multimedia features (Chandrasekharan et al, 2012). With the great revolution of Information Communication Technology (ICT) and development of web technology, majority of the reputed journals both national and international are made available through online mode so that researchers can access them easily and conveniently through Internet. As ICAR offers network connectivity across various institutes and state run agricultural universities, the targeted journals are made available to the scientific community via a specific agricultural network. Keeping the objectives in mind, the Consortium for e-Resources in Agriculture (CeRA) was established in November 2007 for offering easy access of all the key agricultural journals to the teachers and scholars all across the country for promoting academic and research excellence in the field of Agricultural Sciences (ICAR, 2012). In the light of UGC Infonet consortium, universities and agricultural research institutions have formed CeRA with the similar intention (CeRA, 2011).

REVIEW OF LITERATURE

The relevant studies pertaining to the present study are discussed as under:

* Professor & Head, Dept. of Library & Information Science, Guru Nanak Dev University, Amritsar, Punjab, India. Email: amrit_lisc@yahoo.co.in
** Librarian, Doaba College, Jallandhar, Punjab, India.

Kaur (2006) examined the use of e-resources at Guru Nanak Dev University. Results of the survey revealed that the respondents used e-resources mostly for research/ project work and finding relevant information in the area of specialization. The major problem faced by most of the respondents in accessing e-resources was that of slow access speed. E-resources were preferred because of being 'time saving', 'easy to use', 'more informative' and 'more useful'. Raja and Upadhyay (2006) examined the use of e-journals by the researchers at Aligarh Muslim University. The study revealed that the research scholars consulted e-journals both for the purpose of research and updating their own knowledge from time to time as well. Nevertheless, they faced several problems such as 'lack of training', 'unfamiliarity to e-journals, 'slow downloading' and 'lack of terminals'. Singh, et al (2006) in their study revealed that majority of users across categories in Guru Nanak Dev University preferred electronic journals than their printed counterparts. More than two third of the respondents expressed that online journals were easier to access, time saving as well as economic when compared to print journals. Kaur and Verma (2006) examined the use of e-resources at TIET Library, Patiala. The study revealed that e-resources were used for various purposes such as writing papers/projects, preparing lectures/notes and research work.

Borrego (2007) conducted a survey on the use and users of electronic journals at Catalan universities and revealed a very optimist perception of faculty and students regarding awareness and use of electronic journals.Patil, Parameshwar and Kumbargoudar (2007) examined the use of UGC-Infonet Consortium by the faculty members and research scholars in Department of Chemistry at Gulbarga University. The study highlighted the usefulness of Consortium in fulfilling information needs of users though there was need of information literacy campaign among the users. In the similar vein, Gupta (2008) examined the usage of e-journals by the research scholars in the University of Lucknow and reported some of the acute problems faced by the users that included internet access speed, lack of training among others. Chandrakumar (2009) in his study conducted at the University of Madras among the research scholars on the use of e-journals revealed that majority of the respondents (82%) found e-journals useful sources of information. They preferred e-journals because of easy accessibility (51%) and authenticity (47%). Kaur and Randhawa (2010) analysed the use of electronic databases in three universities of British Columbia. The results of the survey revealed that most of the teachers used databases for teaching purpose followed by research purpose and students for homework and assignments. The most common problem faced by most of the respondents was that of mass of irrelevant information.

Kaur (2012) in her study examined the academic attitude of 542 faculty members of five universities towards e-journal use. The results showed that various characteristics like 'faster access', 'available from desktop', 'convenience' 'remote access' etc. affected the choice of e-format over print. A majority of the teachers used e-journals for 'research', 'teaching', 'writing reports', 'current awareness' etc. Benahal (2012) in his study identified the trends in using e-resources by various user groups. The study showed that academics preferred to use e-journals and that both print and e-resources complemented each other.

PUNJAB AGRICULTURAL UNIVERSITY LIBRARY

Punjab Agricultural University Library was initially set up in the year 1959 with a meager collection of 200 books. Currently, this library has grown into leap and bounds with a beautiful five storied building occupying an area of 93,320 sq. ft., centrally air-conditioned and surrounded by lush green lawns, dotted with beautiful ornamental trees and pollution free environment and regarded as one of the best libraries of the region – a place of pilgrimage for scholars and faculty members from all over the country. This library has 760 seating capacity in its five reading halls. The library aims to provide rich knowledge to its users' community and to extend it further through information technology, automation, networking, and resource sharing. The total collection of the library is 3, 92055 including 2, 48,041 books, 37127 theses, 1, 03,623 bound periodicals, 3264 e-books and e-theses. The library is also subscribing to 11 online databases, 127 Indian and 51 foreign printed journals, 3713 online journals[1,2].

CERA (CONSORTIUM FOR E-RESOURCES IN AGRICULTURE)

ICAR (Indian Council of Agricultural Research) provides network accessibility to all agricultural institutes and universities for accessing e-journals by the establishment of the Consortium for e-Resources in Agriculture (CeRA) in 2007. CeRA covers 3309 e-journals (1863 subscribed, open access 501, library journals 945). CeRA provides accessibility to its member libraries for accessing a huge number of e-journals in the field of agricultural research. Main publishers covered under consortium are[3]:

- ASA- American Society of Agronomy
- Annual Review
- CSIRO
- Elsevier
- Indian Journal
- Oxford University Press
- Springer
- Taylor and Francis

SCOPE OF THE STUDY

The study presents the factual data regarding the use of CeRA consortium e-resources and overall view of the faculty members and research scholars towards consortium services at Punjab Agricultural University, Ludhiana.

RESEARCH METHODOLOGY

A well-structured questionnaire was designed to collect the data for the present study. This study presents overall view of the faculty members and researchers about CeRA usage. 17 questions were framed covering different aspects of use of e-resources by the faculty members and researchers of the university. 320 questionnaires were distributed personally among the faculty members and researchers of the University for evaluating usability of e-resources. Out of which 284 questionnaires were received back from the respondents as shown in table 1

Table 1. Rate of Response

Category	Questionnaires Distributed			Response		
Users Status	Faculty	Researchers	Total	Faculty	Researchers	Total
Number of Users	200	120	320	181(90.50%)	103(85.84%)	284(88.75%)

ANALYSIS AND FINDINGS

Awareness of e-resources

Table 2. Awareness of E-resources Available through CeRA

Response	Faculty Members	Researchers	Total (Ave %)
Yes	181(100%)	103(100%)	284(100%)
No	-	-	-
Total	181	103	284

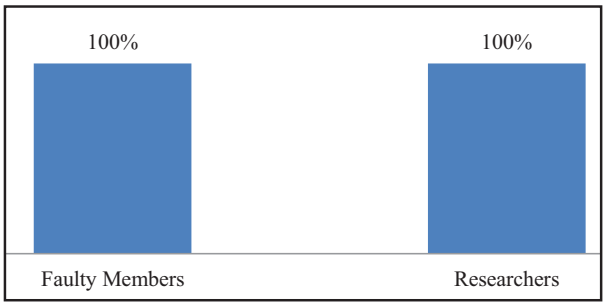

Figure 1. Awareness of E-Resources Available through CeRA

Table 2 and figure 1show that 100% faculty members and researchers included in study are aware of the e-resources available through CeRA.

Mode of Awareness

Table 3. Mode of Awareness

Mode of Awareness	Faculty Members	Researchers	Total (Ave %)
University web-site	11(6.08)	12(11.65%)	23(8.10)
Library orienta-tion programme	24(13.26%)	08(7.77%)	32(11.27%)
Library staff	26(14.37%)	42(40.78%)	68(23.95%)
Teachers	18(9.95%)	37(35.93%)	55(19.37%)
Colleagues	102(56.36%)	04(3.89%)	106(37.33%)
Total	181(100%)	103(100%)	284(100%)

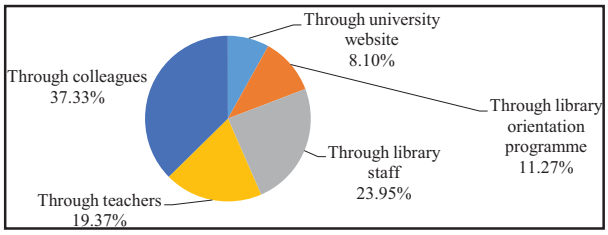

Figure 2. Mode of Awareness

Table 3 and figure 2 show that 37.33% of the faculty members and researchers are aware of CeRA through colleagues, 23.95% through library staff, 19.37% through teachers, 11.27% through library orientation and 8.10% through university website.

Usage of CeRA

Table 4. Usage of CeRA

Frequency	Faculty Members	Researchers	Total (Ave%)
Daily	28 (15.47%)	18(17.48%)	46 (16.20%)
Twice a week	129(71.27%)	72(69.91%)	201(70.78%)
Once a week	16(8.84%)	09(8.74%)	25(8.81%)
Twice a month	06(3.32%)	04(3.89%)	10(3.53%)
Less often	02(1.11%)	-	02(0.71%)
Total	181(100%)	103(100%)	284(100%)

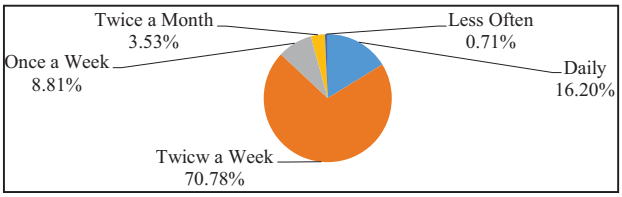

Figure 3. Usage of CeRA

It is clear from table 4 and figure 3 that 70.78% of the faulty members and researchers are using CeRA twice a week, 16.20% daily, 8.81% once a week, 3.53% twice a month and only 0.71% are using less often.

Place of Accessibility

Table 5. Place of Accessibility

Place of Accessibility	Faculty Members	Researchers	Total (Ave%)
Library	62(34.26%)	84(81.56%)	146(51.41%)
Workplace	171(94.48%)	58(56.31%)	229(80.64%)
Hostel	-	21(20.39%)	21(7.40%)

Table 5 and figure 4 show that 80.64% of the faulty members and researchers access CeRA from their workplace, 51.41% from library and 7.40% from hostel.

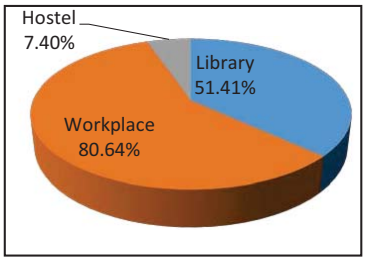

Figure 4. Place of Accessibility

Field Preferred to Access E- resources

Table 6. Field preferred to Access E- resources

Preference	Faculty Members	Researchers	Total (Ave%)
Author	78(43.10%)	66(64.08%)	144(50.71%)
Title	139(76.80%)	84(81.56%)	223(78.53%)
Subject	117(64.64%)	36(34.96%)	153(53.88%)
Keywords	96(53.04%)	59(57.29%)	155(54.48%)

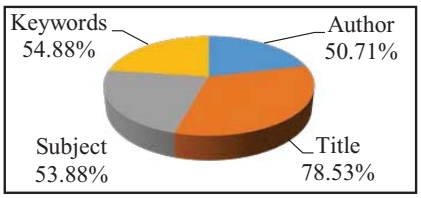

Figure 5. Field Preferred to Access E- Resources

The data in table 6 and figure 5 show that 78.53% of the faulty members and researchers give preference to title for searching any article in CeRA, 54.48% to keywords, 53.88% to subject and 50.71% to author.

Purpose for Accessing E-resources

Table 7. Purpose for Accessing E-resources

Purpose	Faculty Members	Researchers	Total (Ave%)
For research/ project work	167(92.27%)	96(93.21%)	263 (92.61%)
For teaching	119(65.75%)	-	119(41.91%)
For finding relevant information in the area of specification	76(41.99%)	46(44.66%)	122(42.96%)
For getting current information	86(47.52%)	69(66.99%)	155(54.58%)
For updating knowledge	107(59.12%)	79(76.70%)	186(65.50%)
For writing paper and presenting paper in the seminars/conferences	119(65.75%)	46(44.66%)	165(58.10%)

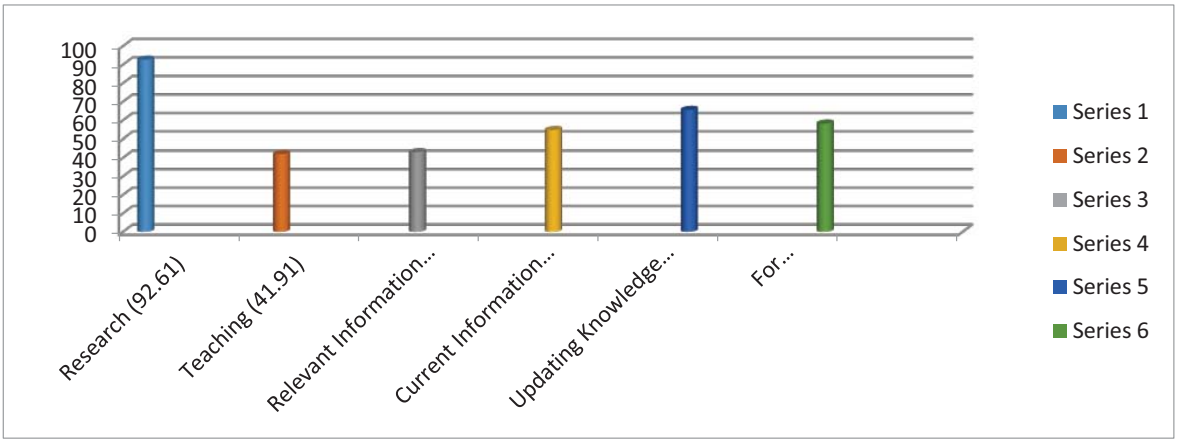

Figure 6. Purpose for Accessing E-Resources

Table 7 and figure 6 show that 92.61% of the faulty members and researchers use CeRA for research/project work, 65.50% for updating knowledge, 54.58% for getting current information, 42.96% for finding relevant information and 41.91% for teaching.

Area of Users Interest (CeRA e-journals)

Table 8. Area of Users' Interest (CeRA e-journals)

Area of interest	Faculty Members	Researchers	Total (Ave%)
Agricultural & Biological Sciences	96(53.04%)	67(65.05%)	163(57.40%)
Arts & Humanities	10(5.53%)	16(15.54%)	26(9.16%)
Basic Sciences	119(65.75%)	48(46.61%)	167(58.81%)
Biomedical Sciences	46(25.42%)	69(66.99%)	115(40.50%)
Engineering & Technology (JET)	46(25.42%)	53(51.46%)	99(34.86%)
Social & Management Sciences	43(23.76%)	36(34.96%)	79(27.82%)

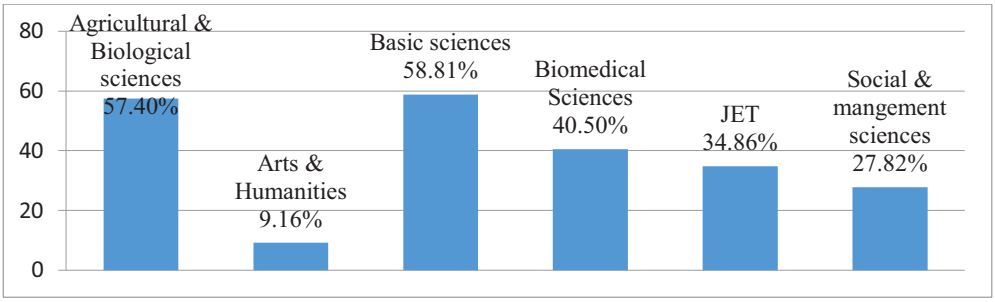

Figure 7. Area of Users' Interest (CeRA e-journals)

Table 8 and figure7 show areas of interest. 58.81% of the faulty members and researchers show interest in Basic Sciences, 57.40% in Agricultural and Biological Sciences, 40.50% in Biomedical Sciences, 34.86% in Engineering and Technology, 27.82% in Social and Management Sciences and only 9.16% show interest in Arts & Humanities.

Preference of Publisher to Access E-Journals

Table 9. Preference of Publisher to Access E-Journals

Publishers	Faculty Members	Researchers	Total (Ave%)
American Society of Agronomy	20(11.05%)	18(17.48%)	38(13.38%)
American Society of Microbiology	26(14.37%)	12(11.65%)	38(13.38%)
Annual Review	46(16.20%)	17(16.51%)	63(22.19%)
BioOne	17(9.40%)	10(9.7%)	27(9.51%)
CSIRO	11(6.08%)	08(7.77%)	19 (6.69%)
Elsevier (Science Direct)	86(47.52%)	49(47.58%)	135(47.54%)
Indian Journals	76(41.99%)	43(41.75%)	119(41.91%)
International Society for Horticultural Science	20(11.05%)	09(8.74%)	29(10.22%)
International Water Association	10(5.53%)	03(2.92%)	13(4.58%)
Oxford University Press	96(53.04%)	67(65.05%)	163(57.40%)
Springer	86(47.52%)	54(52.43%)	140(49.30%)
Taylor and Francis	81(44.76%)	41(39.81%)	122(42.96%)

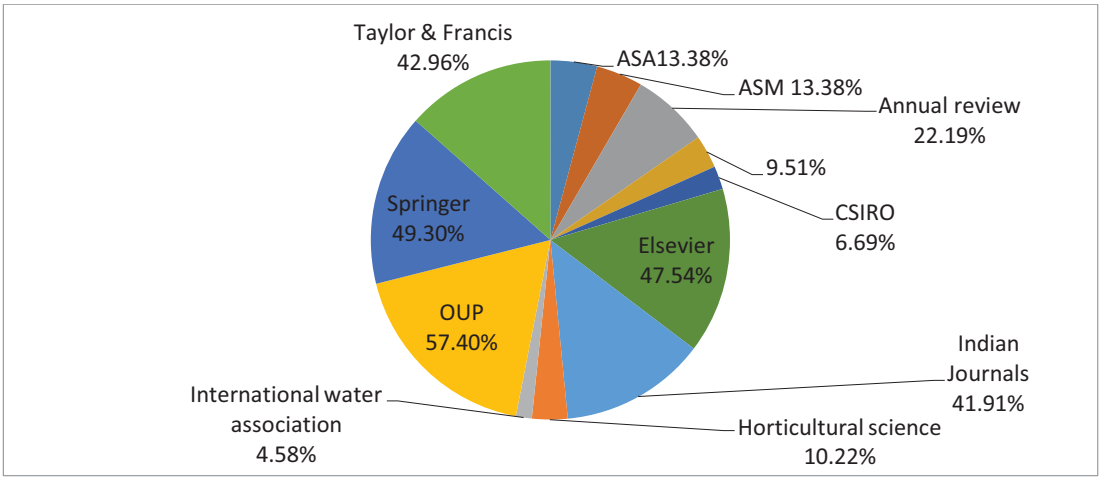

Figure 8. Preference of Publisher to Access E-journals

Table 9 and figure 8 show that 57.40% of the faulty members and researchers access e-journals of Oxford University Press, 49.30% Springer e-journals, 47.54% Elsevier e-journals, 42.96% Taylor and Francis e-journals, 41.91% Indian journals, 22.19% Annual Review, 13.38% American Society of Agronomy e-journals, 13.38% American Society of Microbiology e-journals, 10.22% International Society for Horticultural Science e-journals, 9.51% BioOne e-journals, 6.69% CSIRO e-journals and 4.58% access International Water Association e-journals.

Usage of DDR Service

Table 10. Usage of DDR Service

DDR	Faculty Members	Researchers	Total (Ave %)
Yes	26(14.37%)	12(11.65%)	38(13.38%)
No	155(85.64%)	91(88.35%)	246(86.62%)
Total	181(100%)	103(100%)	284(100%)

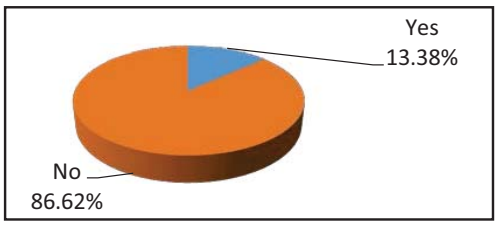

Figure 9. Usage of DDR Service

Table 10 and figure 9 show that only 13.38% of the faulty members and researchers avail the facility of DDR.

Number of Articles Received via DDR Service.

Table 11. Number of Articles Received via DDR Service

Articles	Faculty Members	Researchers	Total (Ave %)
1-5	18(69.23%)	09(75.0%)	27 (71.05%)
6-10	08(30.77%)	03(25.0%)	11(28.95%)
Total	26(100%)	12(100%)	38(100%)

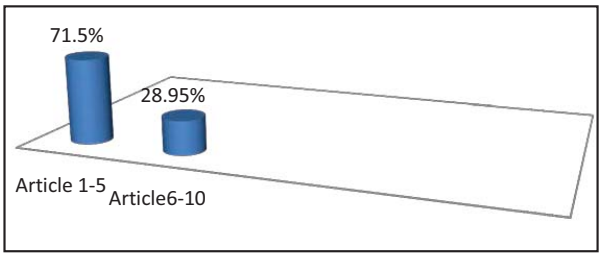

Figure 10. Number of Articles Received via DDR Service

Table 11 and figure 10 show that 38 faculty members and researchers are availing DDR service and out of these 71.5% of the faculty members and researchers received 1-5 articles and only 28.95 % received 6-10 articles under DDR.

Adequacy of Information Available through CeRA

Table 12 and figure 11 show that 94.72 % of the faculty members and researchers find e-resources through CeRA always adequate and only 5.29% find these sometimes adequate.

Table 12. Adequacy of Information Available through CeRA

Adequacy	Faculty Members	Researchers	Total (Ave %)
Always	171(94.48%)	98(95.15%)	269(94.72%)
Sometimes	10(5.53%)	05(4.86%)	15(5.29%)
Total	181(100%)	103(100%)	284(100%)

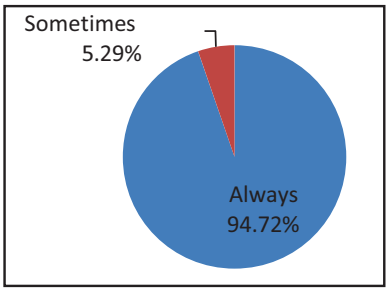

Figure 11. Adequacy of Information Available through CeRA

Satisfaction with E-resources (CeRA)

Table 13. Satisfaction with E-resources

Satisfaction	Faculty Members	Researchers	Total (Ave %)
Very satisfied	33(18.24%)	21(20.39%)	54(19.02%)
Satisfied	148(81.77%)	82(79.62%)	230(80.99%)
Total	181(100%)	103(100%)	284(100%)

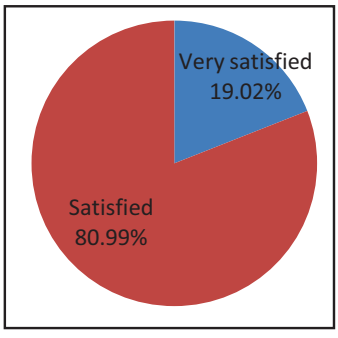

Figure 12. Satisfaction with E-resources

Table 13 and figure 12 show that 80.99% the faculty members and researchers are satisfied and 19.02% are very satisfied with e-resources available through CeRA,

Problems Faced While Accessing E-resources

Table 14. Problems Faced While Accessing e-resources

Problems	Faculty Members	Researchers	Total (Ave %)
Slow access speed	92(50.83%)	62(60.20%)	154(54.23%)
Difficulty in finding the relevant information	109(60.22%)	77(74.76%)	186(65.50%)
Too much information is retrieved	62(34.26%)	42(40.78%)	104(36.62%)
Difficulty in using e-journals due to lack of IT knowledge/learning	11(6.08%)	03(2.92%)	14(4.93%)
Limited access to computers	18(9.95%)	09(8.74%)	27(9.51%)

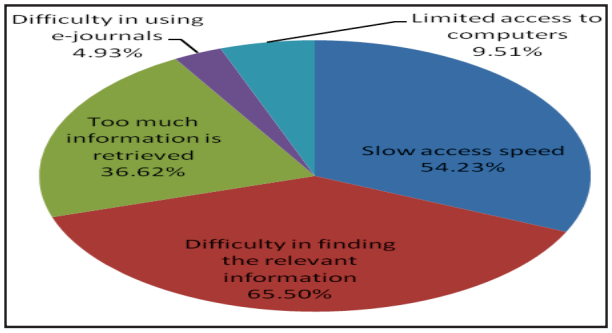

Figure 13. Problems Faced While Accessing E-resources

Table 14 and figure 13 provide information about the problems the faculty members and researchers face in accessing e-journals. The greatest problem faced is the difficulty in finding the relevant information (65.50%). The other problems faced are slow access speed (54.23%), too much information is retrieved (36.62%), limited access to computers (9.51%) and lack of IT knowledge/learning (4.93%).

Benefits of E-resources Over Traditional Documents

Table 15. Benefits of E-resources

Benefits	Faculty Members	Researchers	Total (Ave%)
Time saving	167(92.27%)	96(93.21%)	263(92.61%)
Easy to use	161(88.95%)	92(89.32%)	253(89.09%)
More informative	157(83.43%)	94(91.27%)	251(88.38%)
More interactive	130(71.83%)	89(86.41%)	219(77.12%)
More useful	146(80.67%)	91(88.35%)	237(83.45%)
More preferred	96(53.04%)	86(83.50%)	182(64.09%)

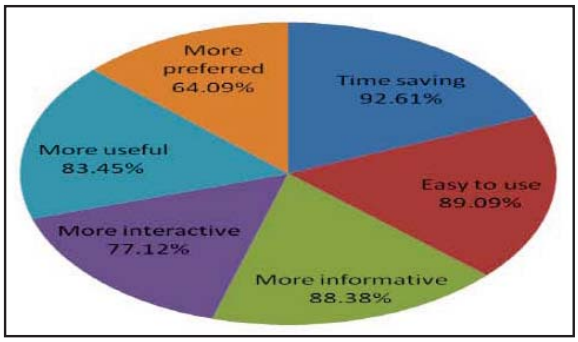

Figure 14. Benefits of E-resources

Table 15 and figure 14 show that 92.61% of the faculty members and researchers consider e-resources as time saving, easy to use (89.09%), more informative (88.38%), more useful (83.45%), more interactive (77.12%) and more preferred (64.09).

Benefits of E-resources

Table 16. Benefits of E-resources

Benefits	Faculty Members	Researchers	Total (Ave%)
Access to current/up to date information	157(86.74%)	92(89.32%)	249(87.68%)
Access to wide range of information	149(82.32%)	94(91.27%)	243(85.57%)
Easy access to information	146(80.67%)	96(93.21%)	242(85.22%)
Faster access to information	141(77.92%)	97(94.18%)	238(83.81%)

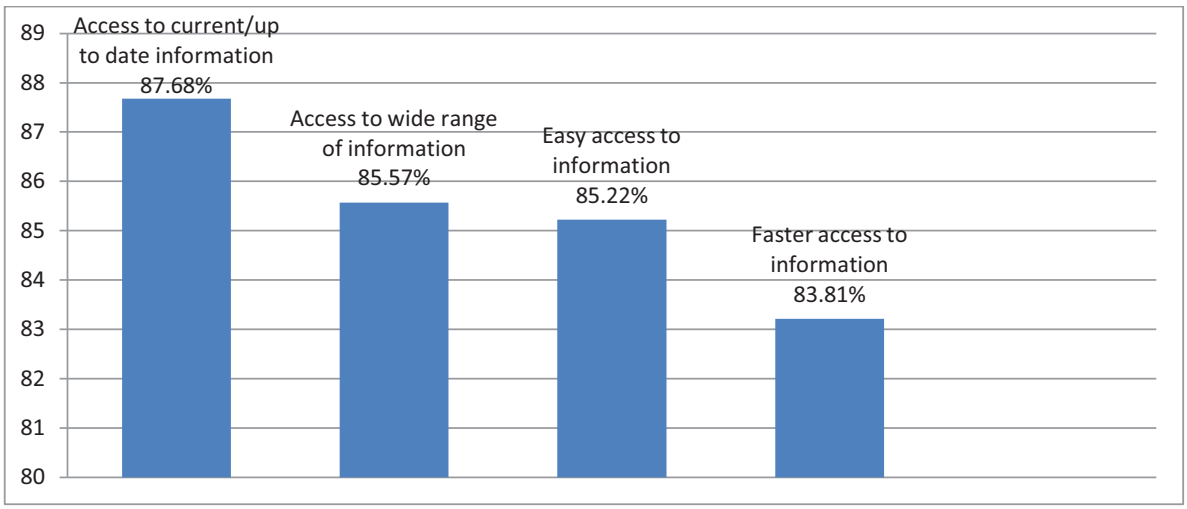

Figure 15. Benefits of E-resources

Table 16 and figure 15 show the benefits that faculty members and researchers perceive in e-resources. The access to e-resources has enabled them to get current and updated information (87.68%), wide range of information (85.57%), easy access to information (85.22%) and faster access to information (83.81%).

Effect of E-resources on Academic Efficiency

Table 17. Effect of E-resources on Academic Efficiency

Effect	Faculty Members	Researchers	Total (Ave%)
Use of traditional documents has decreased	36(19.89%)	16(15.54%)	52(18.31%)
Dependency on e-resources has increased	23(12.71%)	32(31.07%)	55(8.10%)
Expedited the research process	164(90.61%)	98(95.15%)	262(92.26%)
Improved professional competence	137(75.69%)	72(69.91%)	209(73.60%)

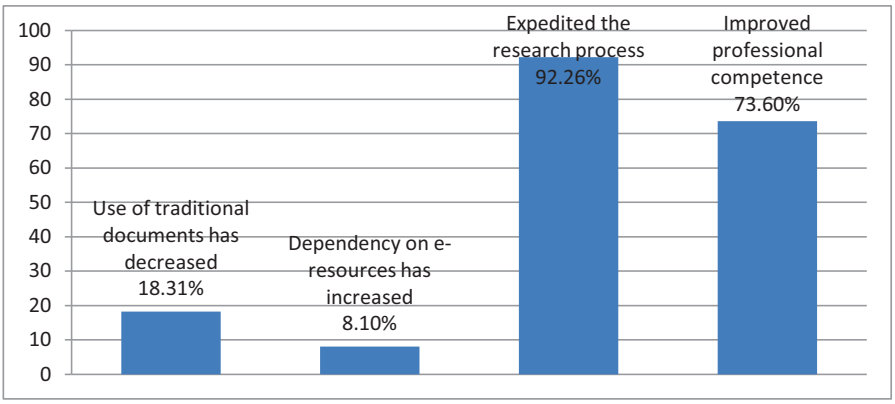

Figure 16. Effect of E-resources on Academic Efficiency

Table 17 and figure 16 show the impact of e-resources on academic efficiency of the faculty members and researchers. 92.26% of the faculty members and researchers feel that these have expedited their research process and improved their professional competency (73.60%). 18.31% feel that use of traditional documents has decreased and dependency on e-resources has increased (8.10%).

Table 18. Effect of E-resources on the Quality of Research

Quality of Research	Faculty Members	Researchers	Total (Ave%)
Highly improved	12(6.63%)	09(8.74%)	21(7.40%)
Improved	102(56.36%)	56(54.37%)	158(55.64%)
Moderately improved	24(13.26%)	06(5.83%)	30(10.57%)
Not at all improved	43(23.76%)	32(31.07%)	75(26.41%)
Total	181(100%)	103(100%)	284(100%)

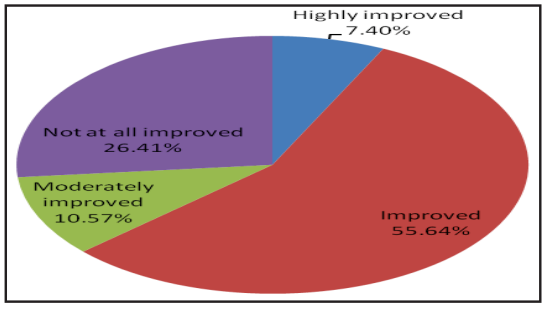

Figure 17. Effect of E-resources on the Quality of Research

Table 18 and figure17 show that 55.64% of the faculty members and researchers admit that with the use of e-resources the quality of research has improved, 10.57% admit moderately improved, 7.40% admit highly improved and 26.41% admit not at all improved.

The data in table 19 depict whether e-resources are good substitutes for conventional resources or not.

Table 19. Substitutes for Conventional Resources

Response	Faculty Members	Researchers	Total (Ave %)
Yes	109(60.22%)	57(55.34%)	166(58.45%)
No	72(39.78%)	46(44.66%)	118(41.55%)
Total	181(100%)	103(100%)	284(100%)

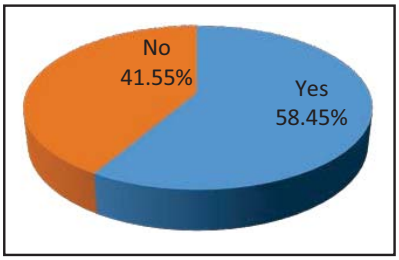

Figure 18. Substitutes for Conventional Resources

Table 19 and figure 18 show that 58.45% of the faculty members and researchers are in favour of e-resources but 41.55% are of the opinion that e-resources can't be good substitute for conventional resources.

Table 20. Adequacy of E-resources Available at the Library

Adequacy	Faculty Members	Researchers	Total (Ave %)
Very adequate	88(48.62%)	33(32.04%)	121(38.74%)
Adequate	77(42.55%)	57(55.34%)	134(51.06%)
Inadequate	16(8.84%)	13(12.63%)	29(10.20%)
Total	181(100%)	103(100%)	284 (100%)

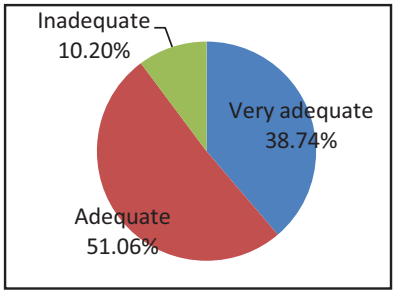

Figure 19. Adequacy of E-resources Available at Your Library

Table 20 and figure 19 show that 38.74% of the faculty members and researchers agreed that e-resources available in the library are very adequate and 51.06 agreed that these are adequate and only 10.20% are disagreed with the adequacy of the e-resources available in the library.

COMMENTS

The constructive comments made by the librarians are given as under:

- One of the major hurdles to acquire sources in library is Budget constraints which can be easily overcome by the e-journals packages or consortium.
- Rapid access to information via e-journals has strengthened and promoted the research interest of scholars.
- CeRA consortium has been instrumental in increasing the quality and quantity of research.
- Quick access, easy validity, desktop access, time saving mode, authentic information etc are the major characteristics which promote the usage of electronic journals.
- The emergence of electronic journals has increased the rate of usage of library.
- Research community and academicians prefer to consult the electronic documents in comparison to the print documents.

SUGGESTIONS

- University Library website is the main platform of e-resources, therefore website must be updated regularly with the current status of CeRA related articles.
- Library should organize orientation programme for the promotion of CeRA in university library. It can increase the number of CeRA users.
- Library staff is supported for the success of CeRA. Their involvement is must in university library.
- University faculty members and researchers should be informed through e-mail about the updating of resources through CeRA.
- Training programme should be organized by the library for the promotion of CeRA.
- Library must provide facility for the use of CeRA outside the university campus.
- CeRA statistics regarding use of e-resources in the university should be publicized.
- Library should give proper attention to the fields of Arts and Humanities, Engineering and Technology, Social and Management Science because within CeRA e-resources in these fields are less.
- Library should update Hardware equipment, increase speed of Internet, provide maximum access points within campus and easy accessibility to users.
- Library should invite suggestions from faculty members and researchers for adding other e-resources.
- Library should provide more training to faculty members and researchers to help them to increase awareness of e-resources and improve skills that enable them to make best use of e-resources available.
- Technological updating is required from time to time to get error free usage.
- Skilled reference librarian who has good IT knowledge is required to handle the queries of users.

CONCLUSION

The quantum of access and use of electronic journals has surely boosted teaching and research activities in all disciplines of study. So, we can say that CeRA provides a lot of e-resources in the field of agricultural sciences. The study shows that faculty members and researchers of the university are using a large number of e-resources available within CeRA. The study also shows the interest of users in the e-resources in spite of print resources. This paper clearly shows that they are satisfied with CeRA and some above suggestions can promote the use of CeRA e-resources in a better way.

NOTES

1. http://www.pau.edu/
2. http://web.pau.edu/msrlibrary/
3. http//www.cera.jccc.in

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