

# USE AND IMPACT OF E-RESOURCES AMONG RESEARCH SCHOLARS: A COMPARATIVE STUDY OF AGRICULTURE AND TECHNOLOGY UNIVERSITIES IN UTTAR PRADESH

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## ABSTRACT

*The purpose of this paper is to assess use and impact of e-resources among research scholars of Agriculture and Technology Universities in Uttar Pradesh. A survey has been conducted and appropriate tools and technology were applied for the collection and interpretation of the data. The study highlights the purpose of using e-resources, methods used for searching and browsing e-resources, satisfaction level and problems among research scholars. On the basis of the findings, suggestions have been put forward for making the optimum use of e-resources and provide effective and efficient library services to its users.*

**Key words:** research scholars; E-resources; Uttar Pradesh; library environment

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## 1. INTRODUCTION

The library environment is currently undergoing a rapid and dynamic revolution leading to a new generation of libraries with an emphasis on electronic resources. On one side, there is a rising offer for good library collection in terms of large amount of information and on the other hand, the publishing medium is determined stiff to support this demand at lightning speed by way of e-publication as well as online access” (**Venkadesan, Jagannath and Puttabasavaiah 2004**). Now a day’s large number of e-resources is published on every topic area. It is the responsibility of the Institution of higher education libraries to collect electronics media for its collection developments policy in a better way to fulfill the needs of different types of users. E-resources are element of the “Invisible Web” which is simply reached and accessed through the Internet. Mainly E-resources are not easily accessible to everyone on the World Wide Web due to technology and fee based. There are free or Open Access resources available to the scholars for their various uses. Several research scholars were consult e-journals from their departmental labs and computer centers.

## 2. REVIEW OF LITERATURE

The use of electronic information resources at Mekelle University, Ethiopia, **Dongardive, P. (2015)** which provides useful suggestion for the development of library management to strengthen the existing electronic resources and services. **Dhingra, N.V. (2013)** observed Consortium e-journals by the faculty member of Punjab Agriculture University, Ludhiana. It found that major challenges were lack of awareness, lack of proper infrastructure etc. He also suggested for the proper training for the users for maximum usage of e-journals. **Kalbande, S., and Ingle (2013)** surveyed 108 faculty members at the Mahatma Phule Agricultural University, India and observed that the impact of e-resources was visible from the decrease in the number of printed documents in comparison to the increase number of electronic resources. **Chandrasekharan, et.al. (2012)** satisfied that the Consortium for e-Resources in Agriculture (CeRA) plays a key role in the research and developmental activities in NARS. **Dhanavandan, Esmail, and Nagarajan, (2012)** studied about the use of electronic resources at the Krishnasamy College of engineering & technology library, cuddalore and revealed that users are giving more importance to the electronic version of the documents. It further suggested that the librarians have to evolve more scientific methods to develop a standard collection of e- resources along with print documents with assessing the requirements of the user community. **Francis, A.T. (2012)** studies the evaluation of Use of Consortium of e-Resources in Agriculture in Context of Kerala Agricultural University and found that the CeRA of ICAR has become a heavily-used service by the students. Curriculum-based information literacy courses like 'library and information services', 'research methodology', etc., have contributed much towards imparting required skills for the access and use of digital information resources. **Shukla and Mishra (2011)** made a study to examine their views on the usefulness of e-resources compared to that of print resources, and the place from where they prefer to access information. Research scholars’ prefer e-resources against print resources because of their various good features of their research work and are looking in future to have more e-resources access within the university campus with better Internet connectivity.. **Madhusudhan (2008)** in his study on Use of UGC-Infonet e-journals by research scholars and students of the University of Delhi, Delhi'. The result showed that most of the respondents (72%) are accessing e-journals through department computer laboratories, 47% accessed from the central library, 73% of respondents agreed that print journals are important for the foreseeable in future. 64% of the respondents strongly attests to the fact that they need proper training/orientation for searching e-journals. 75% respondents stated that they are accessing UGC Infonet e-journals for current and up-to-date information.

### 3. SCOPE OF THE STUDY

The scale of the study covers the research scholars of all universities of Agriculture Science and Technology of Uttar Pradesh.

- Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.
- Narendra Deva University of Agriculture and Technology, Faizabad.
- Sardar Vallabh Bhai Patel University of Agriculture & Technology, Meerut.
- Banda University of Agriculture and Technology, Banda

### 4. OBJECTIVES OF THE STUDY

- To study the various type of electronic resources used by research scholars.
- To study the intention and occurrence of using the electronic resources and services available in the library.
- To examine the problems faced by research scholars in accessing electronic resources.
- To find out the impact of e-resources over conventional sources of information.
- To study the impact of electronic resources on the academic and research work.

### 5. DATA ANALYSIS AND INTERPRETATION

University Wise Respondent

S. No.	Name of Colleges	Distributed	Received
1	SardarVallabhbhai Patel University of Agricultural Science Technology, Meerut (S.V.B.P.U.A.S.T. Meerut)	65	65(100%)
2	Chandra Shekher Azad University of Agricultural Science Technology, Kanpur (C.S.A.U.A.S.T. Kanpur)	70	66(94.28%)
3	Narendra Deva University of Agricultural Science Technology, Faizabad (N.D.U.A.S.T, Faizabad)	65	65(100%)
4	*Banda University of Agriculture And Technology, Banda (B.U.A.T, Banda)	-----	-----
	Total	200	196
	Percentage (%)	100%	98%

In Banda University of agriculture and technology is not running PhD programme as on the date of research

Total 200 questionnaires were distributed and out of that only 196 filled questionnaires received. The response of Sardar Sardar Vallabhbhai Patel University of Agricultural Science Technology, Meerut is 65 (100%), Narendra Deva University of Agricultural Science Technology, Faizabad is 65 (100%) and Chandra Shekher Azad University of Agricultural Science Technology, Kanpur is 66(94.28%) has been received. In Banda University of agriculture and technology, there is no running programme of Ph.D.

### 5.1. Frequency of Visit to Library

**Table1** Frequency of Visit to Library

Name of University	Daily	2 to 3 Days in a Week	Once a Month	Occasionally
S.V.B.P.U.A.S.T. Meerut	9 (13.84%)	20 (30.76%)	9 (13.84%)	27 (41.53%)
C.S.A.U.A.S.T. Kanpur	19 (27.14%)	25 (35.71%)	6 (8.57%)	16 (22.85%)
N.D.U.A.S.T, Faizabad	32 (49.23%)	19 (29.23%)	12 (18.46%)	2 (3.07%)
Total	60	64	27	45
Percentage (%)	30%	32%	13.5%	22.5%

The above table shows the total numbers of users visit the library and they visit daily 60(30%), two to three days in the week 64(32%), once in a month 27(13.5%) and occasionally visit is 45(22.5%).

### 5.2. Awareness about E-Resources

**Table 2** Awareness about E-Resources

S. No	University	Yes	No
1	S.V.B.P.U.A.S.T. Meerut	57(87.69%)	8(12.30%)
2	C.S.A.U.A.S.T. Kanpur	55(78.57%)	11(15.71%)
3	N.D.U.A.S.T, Faizabad	58(89.23%)	7(10%)
	Total	170	26
	Percentage (%)	85%	13%

This table shows that 170 (85%) users are aware about e-resources and 26(13%) are not aware. It shows that most of the users are aware of e-resources.

### 5.3. Frequency of Use of E-Resources

**Table 3** Frequency of Use of E-Resources

University	Daily	Weekly	Monthly	Rarely
S.V.B.P.U.A.S.T. Meerut	17(26.15%)	11(16.92%)	23(35.38%)	6(9.23%)
C.S.A.U.A.S.T. Kanpur	20(28.57%)	7(10%)	17(24.28%)	11(15.71%)
N.D.U.A.S.T, Faizabad	10(15.38%)	24(36.92%)	20(30.76%)	4(6.15%)
Total	47	42	60	21
Percentage (%)	23.5%	21%	30%	10.5%

The above table shows the frequency of use of e-resources by the scholars. It shows that 47(23.5%) users access daily, 42(21%) users access weekly, 60(30%) uses monthly, and 21(10.5%) users access rarely.

## 5.4. Purpose of Using Electronic Resources

**Table 4** Purpose of Using Electronic Resources

University	For Learning & Study	For Research	To update knowledge	Writing Research Document	Project Works	Any Other
S.V.B.P.U.A.S.T. Meerut	24(36.92%)	50(76.92%)	16(24.61%)	29(44.61%)	14(21.53%)	—
C.S.A.U.A.S.T. Kanpur	27(38.57%)	25(35.71%)	24(34.28%)	13(18.57%)	11(15.71%)	10(14.28%)
N.D.U.A.S.T, Faizabad	30(46.15%)	20(30.76%)	11(16.92%)	5(7.69%)	8(12.30%)	3(4.61%)
Total	81	95	51	47	33	13
Percentage (%)	40.5%	47.5%	25.5%	23.5%	16.55	6.5%

The above table shows that 81(40.5%) users use for learning and study, 95(47.5%) for research, 51(25.5%) for to update knowledge, 47(23.5%) for writing research documents, 33(16.55%) for project work for the purpose of using e-resources

## 5.5. Preferred Type of E-Resources

**Table 5** Preferred Types of E-Resources

University	E-Books	E-Journals	CDs/DVDs	Online Databases	E-theses & Dissertation
S.V.B.P.U.A. S.T Meerut	16(24.61%)	34(52.30%)	5(7.69%)	55(84.61%)	22(33.84%)
C.S.A.U.A.S.T. Kanpur	29(41.42%)	23(32.85%)	25(35.71%)	25(35.71%)	15(21.42%)
N.D.U.A.S.T, Faizabad	31(47.69%)	31(47.69%)	15(23.07%)	5(7.69%)	8(12.30%)
Total	76	88	45	85	45
Percentage (%)	38% 38%	44%	22.5%	42.5%	22.5%

The above table shows the users preference of various types of e-resources. 76(38%) users preferred e-books, 88(44%) preferred e-journals, 45(22.5%) users choice is CDs/DVDs, 85(42.5%) online database and 45(22.5%) e-thesis and dissertation.

## 5.6. Use of Agriculture CD ROM/ Online Database

**Table 6** Use of Agriculture CD ROM/ Online Database

University	CAB Abstracts	AGRIS	AGRICOLA	Any Other
S.V.B.P.U.A.S.T. Meerut	23(35.38%)	16(24.61%)	44(67.69%)	10(15.38%)
C.S.A.U.A.S.T. Kanpur	47(67.14%)	14(20%)	16(22.85%)	1(1.42%)
N.D.U.A.S.T, Faizabad	43(66.15%)	38(58.46%)	21(32.30%)	—
Total	113	68	81	11
Percentage (%)	56.5%	34%	40.5%	5.5%

The above table shows the use of agriculture based resources CD ROM/ online database. It reveals that majority of the scholars 113(56.5%) use CAB abstracts, 68(34%) users use AGRIS, 81(40.5%) users consult AGRICOLA and 11(5.5%) user uses other e-resources.

### 5.7. Method Use for Reading E-Resources

**Table 7** Method Use for Reading E-Resources

S. No	University	Computer Screen	Printout	Both
1	S.V.B.P.U.A.S.T. Meerut	24(36.92%)	10(15.38%)	31(47.69%)
2	C.S.A.U.A.S.T. Kanpur	20(28.57%)	7(10%)	39(55.71%)
3	N.D.U.A.S.T, Faizabad	19(29.23%)	9(13.84%)	37(56.92%)
	Total	63	26	107
	Percentage (%)	31.5%	13%	53.5%

The above table shows the methods used for reading e-resources. The result show that 63(31.5%) users use computer screen, 26(26%) users on printout and 107(53.5%) users use both of the medium.

### 5.8. Opinion about the Availability of E-Resources in the Library

**Table 8** Opinion about the Availability of E-Resources in the Library

University	Excellent	Good	Average	Poor
S.V.B.P.U.A.S.T. Meerut	10(15.38%)	14(21.53%)	18(27.69%)	23(35.38%)
C.S.A.U.A.S.T. Kanpur	9(12.85%)	12(17.14%)	22(31.42%)	23(32.85%)
N.D.U.A.S.T, Faizabad	20(30.76%)	33(50.76%)	9(13.84%)	3(4.61%)
Total	39	59	49	49
Percentage (%)	19.5%	29.5%	24.5%	24.5%

The above table shows the users opinion about the availability of e-resources in the library. The result shows that most of the scholars say 59(29.5%) is good and 49 (24.5%) is poor. The overall results are not so unsatisfactory related to the availability of e-resources.

### 5.9. Form of E-Resources Preferred

**Table 9** Form of E-Resources Preferred

Name of University	Electronic Form	Printed Form
S.V.B.P.U.A.S.T. Meerut	54(83.07%)	11(16.92%)
C.S.A.U.A.S.T. Kanpur	39(55.71%)	27(38.57%)
N.D.U.A.S.T, Faizabad	42(64.61%)	23(35.38%)
Total	135	61
Percentage (%)	67.5%	30.5%

This table shows that 135 (67.5%) preferred electronic form and 61(30.5%) is in printed form. It shows that majority of the research scholar's preferred electronic form.

### 5.10. Reasons for Using E-Resource

**Table 10** Reasons for Using E-Resource

University	Convenience	Searching & Browsing	Easy Alteration	24 Hours Availability
S.V.B.P.U.A.S.T. Meerut	7(10.76%)	15(23.07%)	20(30.76%)	12(18.46%)
C.S.A.U.A.S.T. Kanpur	7(10%)	20(28.57%)	10(14.28%)	10(14.28%)
N.D.U.A.S.T, Faizabad	22(33.84%)	13(20%)	10(15.38%)	13(20%)
Total	36	48	40	35
Percentage (%)	18%	24%	20%	17.5%

The above table shows the various reasons for using e-resources. Majority of the users use for searching and browsing is 48(24%) followed by easy alteration is 40 (20%), 24 hours Availability is 35(17.5%) and 36(18%) is for convenience.

### 5.11. Troubles Facing to Accessing the E-Resources

**Table 11** Troubles Facing to Accessing the E-Resources

Problems	S.V.B.P.U.A.S.T . Meerut	C.S.A.U.A.S.T. Kanpur	N.D.U.A.S.T, Faizabad	Total	%
Poor Internet Connectivity	34(52.30%)	34(48.57%)	29(44.61%)	97	48.50%
Consumes Too Much Time	9(13.84%)	10(14.28%)	24(36.92%)	43	21.5%
Frequent Power Cuts	5(7.69%)	6(8.57%)	8(12.30%)	19	9.5%
Inadequate Computer System	7(10.76%)	10(14.28%)	5(7.69%)	22	11%
Lack Guidance And Training	9(13.84%)	6(8.57%)	8(12.30%)	23	11.5%
No Answer	2(3.07%)	-----	-----	02	1%

This table shows the users facing troubles to accessing the e-resource. 97(48.5% ) user face poor internet connectivity, 43(21.5%)user feels its consumes too much time, 19(9.5%) users face frequent power cut, 22(11%)user with inadequate computer system, 23(11.5%) users with lack of guidance and training and 02(1%)user did not responded.

### 5.12. Access of E-Resources

**Table 12** Access of E-Resources

University	University Website	Publishers Website	Search Engines	Any Other	No Answer
S.V.B.P.U.A.S.T. Meerut	16(24.61%)	3(4.61%)	47(72.30%)	—	1(1.53%)
C.S.A.U.A.S.T. Kanpur	16(22.85%)	18(25.71%)	34(48.57%)	8(11.42%)	—
N.D.U.A.S.T, Faizabad	38(58.46%)	17(26.15%)	11(16.92%)	3(4.61%)	—
Total	70	38	92	11	1
Percentage (%)	35%	19%	46%	5.5%	0.5%

This table shows that majority of the users 92(46%) uses search engines, 70(35%) uses University websites, 38(19%) uses publishers website, and 11(5.5) uses other medium.

### 5.13. From Which Place Do You Most Frequently Use E-Resources

**Table 13** From Which Place Do You Most Frequently Use E-Resources

Name of University	University Library	Department	At Home	Computer Labs	Any Other
S.V.B.P.U.A.S.T. Meerut	10(15.38%)	52(80%)	4(6.15%)	11(16.92%)	7(10.76%)
C.S.A.U.A.S.T. Kanpur	24(34.28%)	20(28.57%)	15(23.07%)	19(27.14%)	11(15.71%)
N.D.U.A.S.T, Faizabad	33(50.76%)	28(43.07%)	7(10.76%)	9(13.84%)	3(4.61%)
Total	67	100	26	39	21
Percentage (%)	33.5%	50%	13%	19.5%	10.5%

This table shows that majority of the users 100(50%) access from the department and 67 (33.5%) from university library for frequently access of electronic resources.

### 5.14. Satisfaction with the E-Resources, Facilities Provided By the University Library

**Table 14** Satisfaction with the E-Resources, Facilities Provided By the University Library

University	Fully	Partially	Lease satisfied	No comment	No Answer
S.V.B.P.U.A.S.T. Meerut	17(26.15%)	19(29.23%)	22(33.84%)	7(10.76%)	—
C.S.A.U.A.S.T. Kanpur	28(70%)	18(25.71%)	18(25.71%)	2(3.07%)	—
N.D.U.A.S.T, Faizabad	26(40%)	4(6.15%)	2(3.07%)	32(49.23%)	1(1.53%)
Total	71	41	42	41	1
Percentage (%)	35.5%	20.5%	21%	20.5%	0.5%

This table shows that most of the users 71(35.5%) fully satisfied with the e-resources available in the university library followed by 41(20.5%) partially satisfied, 42(21%) lease satisfied, 41(20.5%) no comment, and 1(0.5%) not responded.

### 5.15. Satisfaction about E-Journals

**Table 15** Satisfaction about E-Journals

University	Fully	Partially	Lease satisfied	No comment	No Answer
S.V.B.P.U.A.S.T. Meerut	27(41.53%)	18(27.69%)	18(27.69%)	2(3.07%)	—
C.S.A.U.A.S.T. Kanpur	24(34.28%)	20(28.57%)	14(20%)	8(11.42%)	—
N.D.U.A.S.T, Faizabad	9(13.84%)	12(18.46%)	5(7.69%)	38(58.46%)	1(1.57%)
Total	60	50	37	48	1
Percentage (%)	30%	25%	18.5%	24%	0.5%

The above table shows user satisfaction about e-journals provided by the university library. 60(30%) users fully satisfied, 50(25%) partially satisfied, 37(18.5%) lease satisfied and 48(24%) no comment.



### 5.16. Impact of E-Resources on the Research

**Table 16** Impact of E-Resources on the Research

University	Fast Communication of research results	Save the time in literature search	Enhance research publication	Enhance reading habits
S.V.B.P.U.A.S.T. Meerut	35(53.84%)	13(20%)	17(26.15%)	9(13.84%)
C.S.A.U.A.S.T. Kanpur	16(22.85%)	29(41.42%)	17(24.28%)	4(5.71%)
N.D.U.A.S.T, Faizabad	33(50.76%)	20(30.76%)	8(12.30%)	4(6.15%)
Total	84	62	42	17
Percentage (%)	42%	31%	21%	8.5%

The above table shows that E-resources has made impact on the research is by fast communication of research results 84(42%), save the time in literature search 62(31%) and enhanced research publication is 42 (21%).

### 5.17. Satisfaction level of E- Resources on the Academic Work

**Table 17** Satisfaction level of E- Resources on the Academic Work

University	Highly improved	Improved	Moderately improved	Very little improved	Not at all improved
S.V.B.P.U.A.S.T. Meerut	10(15.38%)	16(24.61%)	12(18.46%)	11(16.92%)	16(24.61%)
C.S.A.U.A.S.T. Kanpur	18(25.71%)	12(17.14%)	13(18.57%)	10(14.28%)	13(18.57%)
N.D.U.A.S.T, Faizabad	39(60%)	10(15.38%)	3(4.61%)	9(13.84%)	4(6.15%)
Total	67	38	28	30	33
Percentage (%)	33.5%	19%	14%	15%	16.5%

The above table shows that 67(33.5) user satisfied with e-resources on their academic work followed by 38(19%) improved, 28(14%) moderately improved, 30(15%) very little improved and 33(16.5%) not at all improved.

## 6. FINDINGS

Majority of the users are aware of e-resources and used e-resources in a month for the learning, study and research. The most of the scholars preferred e-journals due to ease of searching and browsing facilities. They are utilizing print as well as electronic resources for various purpose .majority of research scholars are not satisfied with the availability of e-journals, internet connectivity and its speed.

## 7. SUGGESTIONS

- The library should be set-up a separate infrastructure for e-resources.
- A comprehensive collection development policy of acquisition of e-resources must be framed.
- The library must be automate housekeeping operations and ensure that services to their users are efficiently provided, which includes networking operations.
- The library should be open a separate e-resources section and open 24X7 so that the users can access e-resources without any problem.

- The library should be periodically evaluated current technology. Because it is a crucial issue for all the librarians. The hardware related concerns include: reliability, upgrade-ability, maintenance, compatibility with peripherals, flexibility for other uses/networking, and security from theft and tampering.
- The software that is used in designing e-resources should have context sensitive, comprehensive help features so that they can solve the problem of users while searching the e-resources.
- The library should preserve and protect e-resources. Because the security is needed to prevent unauthorized changes to web sites.
- The library should provide best services with integration of new equipment and technology of Information Communication and Technology. The best library service combines information seeking, guidance and instruction. It also includes lessons in the analysis and evaluation of the value of the information retrieved and the accuracy of the method of retrieval.
- The library must appoint the professional staff to undertake e-resources management and service activities and provide in-service training for professional staff, encourage and support attendance at other professional programs, and provide the appropriate equipment suitable for service at the highest level.
- The library must periodically provide user education programme. Large numbers of users are unaware of the use of e-resources. The Library should design courses on user education and impart training to the students and faculty for effective use of e-resources.

## 8. CONCLUSION

E-resources are gradually replacing the print materials of library. In this changing library context it is highly essential to manage these e-resources properly for their wide and effective use, otherwise a major portion of library budget, which is spent towards this will be a waste. It was observed that the library which is not automated leads to the problems in sharing of e-resources as well as in managing and promoting of e-resources.

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