

Use of E-Resources among Academia of Science in Universities of Andhra Pradesh and Telangana: A study

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***Abstract** - The present study is an attempt to determine the use of E-resources by academia of science in universities of Andhra Pradesh and Telangana. Over all 58.5% of respondents from universities of Telangana and Andhra Pradesh have more than two years of experience in using E-resources. Altogether 63.1% of respondents are found to be using E-resources more than two hours daily. The study found that 41.4% of respondents from Universities of Andhra Pradesh and 35.2% of respondents from universities of Telangana always use E-resources for the purpose of research and 29.6% of respondents from Universities of Andhra Pradesh and 17.9% of respondents from universities of Telangana are using E-resources “Always” for the purpose of “Teaching”. There is a slight decrease in library visit and print reading habit among the respondents due to the use of E-resources. On the other hand there is a slight increase in academic performance among the respondents due to the use of E-resources.*

Key Words: E-resources; E-books; E-journals; Institutional Repositories; E-databases; OPAC (Online Public Access Catalogues); E-reports; Academia of science; Demographic characteristics; Andhra Pradesh; Telangana,

1. Introduction

The emergence of World Wide Web (WWW) as a new media of information delivery, coupled with availability of powerful hardware, software and networking technology has triggered large scale commercial and non commercial digitization projects all over the world. An increasing number of publishers and vendors are using Internet as a global way to offer their publications to the international community of scientists and technologists. The services and the collections of libraries and information centre are becoming global due to the application of Information Communication Technologies, at the same time the modern day information seekers crave for instant and speedy access to their required relevant information, especially at their convenient time and locations such as work place, homes, while on travel etc., without physically visiting the library. E-resources have enormous proven advantages over the traditional print resources and they can be used for fast and instant delivery of large quantities of data surpassing the geographical boundaries.

2. Review of literature

Cooper (1988) has rightly defined literature review as "A literature review uses as its database reports of primary or original scholarship, and does not report new primary scholarship itself. The primary reports used in the literature may be verbal, but in the vast majority of cases reports are written documents. The types of scholarship may be empirical, theoretical, critical, analytic, or methodological in nature. Second a literature review seeks to describe, summarize, evaluate, clarify and integrate the content of primary reports". Literature review is more than a summary of publications, which provides evidence that research is new and supported by relevant contribution.

Vinod Kumar, Vandana and Batra (2018) conducted study to find out the usage pattern of electronic resources among management graduates in Nagpur. The study found that all the students are well aware about E-resources and consider them to be very useful for their academic performance; they are using non-paid resources more than paid ones because of a lack of search skills, students from the disciplines of information technology, economics and finance use E-resources more frequently than those studying subjects like marketing, operations and human resource management. Faculty and training have a positive influence on students in using E-resources.

Anasuya (2017) conducted a study on the usage of electronic resources among the medical, dental and paramedical science professionals in Karnataka. The preferred location of access of internet of the respondents was the college/university library (59.57%), followed by department library (20%) and home (19.13%). It is found that medical professionals were top in using E- resources for all the purpose, the mean value of their use was 4.8 on a 7 pint scale ,followed by dental respondents, mean value of their use was 4.00, then medical technology professionals, the mean value of use was 3.89. It is found that medical professionals were facing various problems in using e-resources out of which lack of time was the most predominant one.

Tamrakar, and Garg (2016) conducted research in IIT-Guwahati Library. The study found that only 59.89% of the users were aware about e- resources and 40.10% users were not aware of e- resources. The e-journals were the most preferred resource in the library as indicated by 39.84% of respondents followed by print journals preferred by 30.20% respondents, followed by back volume of journals 18.27% and E-databases were preferred by 7.86% of users. The users were asked about the purpose of searching INDEST-AICTE consortium; 36.54% responded that they search for full text e- journal, 30.96% search for abstract/articles, 14.21% indicated that they search for bibliographic databases and 18.27% responded that they look for back files of e-journals.

Qasim and Khan (2015) found that 20.50% of scientist's visits library daily, 25% visits weekly, 18.20% visits fortnightly and 22.70% visits monthly and 100% scientists uses E- journals on daily basis. The most liked feature of E- journals is the speed of access 93.20%, followed by ease of search 88.6% and updated information 63.6%. It is found that 100 % scientists were using E- journals for research, 75% scientists were using it for updating their knowledge, 47.7 % using it for writing articles. Scientists were found to be using various search strategies and methods, 81.8% of scientists were found to be using title of the journal for search, 75% of scientists were using author name and 72.70% were using key words.

Garg and Tamrakar (2014) the result of this study shows that 45.15% of users prefer to use digital version, 34.70% prefer print version than digital and 20.14% responded that they have no specific choice. The respondents were asked to rate the quality of e- services provided by the library, 40.53% indicated that the services were helpful, 29.36% indicated that very helpful, 21.35% indicated that extremely helpful and 8.73% responded that the services are not helpful. It is found that frequency of use of E -resources varies considerably among the users, 21.35% of respondents indicated that they uses E- resources on daily basis, 34.22% indicated that they use several times in a week, 34.46% indicated that they use occasionally, and 9.95% indicated that they have never used any E-resources.

3. Objectives

1. To find out the time spent daily in using E-resources by academia of science in Universities of Andhra Pradesh and Telangana.
2. To find out the length of experience in using E-resources by academia of science in Universities of Andhra Pradesh and Telangana.
3. To find out the impact of use of E-resources on Library visits among academia of science in Universities of Andhra Pradesh and Telangana.
4. To find out the impact of use of E-resources on print reading habits among academia of science in Universities of Andhra Pradesh and Telangana.
5. To find out the impact of use of E-resources on academic performance among academia of science in Universities of Andhra Pradesh and Telangana.
6. To find out the impact of use of E-resources on information searching and retrieval skill among academia of science in Universities of Andhra Pradesh and Telangana.

4. Scope and limitations of the study

Three universities each from Andhra Pradesh and Telanagana were selected for the proposed study. The following three Universities were selected from the state of Andhra Pradesh; they are Sri Venkateswara University, Tirupati, Andhra University, Vishakapatnam and Acharya Nagarjuna University, Guntur. The Universities selected from Telangana were University of Hyderabad, Hyderabad, Osmania University, Hyderabad and Kakatiya University Warangal. The study is restricted to computer literacy and use of internet by the faculty members and research scholars belong to science departments of the universities selected for the study. The remaining Universities from Andhra Pradesh and Telangana were excluded from the present study owing to the limitations of time and resources.

5. Methodology

The total population of the study comprise of all the faculty members and research scholars belonging to science departments Viz: Chemistry, Physics, Life Sciences, Mathematical Sciences, Earth Sciences, Computer Sciences etc., of the selected six universities. The study was based on survey method and structured questionnaire was used for data collection. The questionnaire was given randomly to faculty members and research scholars belong to science departments. The researcher distributed 250 questionnaires to each of the six universities selected from Andhra Pradesh and Telangana. A total of 750 questionnaires were distributed in Andhra Pradesh and 469 usable responses were received back for analysis, forming a response rate 62.53%. Similarly 750 questionnaires were distributed in Telangana

and 458 usable responses were received back for analysis, forming a response rate 61.07%. Altogether 1500 questionnaires were distributed and 927 usable responses were received back for analysis, forming a response rate of 61.8 percent, which was found adequate for the purpose of analysis. The data has been analyzed by using Statistical Software Package (SPSS) which are presented in table form below.

6. Result and discussion

The result and discussion of the data gathered for the study are given as follows

6.1. Demographic distribution of the respondents

The Demographic distribution of respondents is given in the table 1. It may be seen from the table that there are three universities each, in both the states of Andhra Pradesh and Telangana. From the table it is clear that exactly there are 93 professors among the respondents, representing (10.03%) of the total respondents. Out of this 93 professors 10(10.8%) of total Professors are from Acharya Nagrjuna University; Andhra University has 21(22.6%) Professors and SVU has 23 (24.7%) Professors. There are 14 (15.1%) Professors in OU; KU has 13(14.0%) Professors and UOH has 12 (12.9%) Professors.

Altogether there are 41 Associate Professors, representing (4.42%) of the total respondents. Out of this 41 Associate Professors, 3 (7.3%) total Associate Professors are from Achryan Nagrajuna University; AU has 4(9.8%) Associate Professors and there are 7 (17.1%) Associate Professors from SVU. Similarly there are 13 (31.7%) Associate Professors in OU; KU has 1(2.4%) Associate Professors and there are 13 (31.7%) Associate Professors from UOH.

There are 172 Assistant Professors, representing 18.55% of total respondents. Out of this 172 Assistant Professors 29 (16.9%) are from ANU; 29(16.9%) Assistant Professors are from AU and 16(9.3%) Assistant Professors from SVU. There are 41 (23.8%) Assistant Professors are from OU; 28(16.3%) Assistant Professors are from KU and 29(16.9%) Assistant Professors are from UOH.

Exactly here are 621 Research Scholars, representing 66.99% of total respondents. Out of this 621 Research Scholars 118 (19.0%) are from AU; 108 (17.4%) are from ANU; 101(16.3%) are from SVU. There are 114 (18.4%) Research Scholars are from UOH; 108 (17.4%) are from OU and 72 (11.6) are from KU. Totally the respondents from all the four categories (Professor, Associate Professor, Assistant Professor and Research Scholars) from both the states are 927 (100%) in number.

Table- 1
Demographic distribution of the respondents

S/N	Designation	States						Total (N=927)
		Andhra Pradesh			Telangana			
		ANU	AU	SVU	OU	KU	UOH	
1	Professor	10(10.8)	21 (22.6)	23(24.7)	14(15.1)	13(14.0)	12(12.9)	93 (10.03)
2	Associate Professor	3(7.3)	4(9.8)	7(17.1)	13(31.7)	1(2.4)	13(31.7)	41 (4.42)
3	Assistant Professor	29(16.9)	29(16.9)	16(9.3)	41 (23.8)	28(16.3)	29(16.9)	172(18.55)
4	Research Scholar	108(17.4)	118(19.0)	101(16.3)	108(17.4)	72(11.6)	114(18.4)	621(66.99)
5	Total	150(16.2)	172(18.6)	147(15.9)	176(19.0)	114(12.3)	168(18.1)	927(100)

Note: Within the parenthesis indicates % (percentage)

Key: ANU – Acharya Nagrjuna University, AU – Andhra University, SVU- Sri Venkateswara University, OU- Osmania University, KU- Kakkatiya University, UOH- University of Hyderabad

6.2 Length of experience in using E-resources

Table no 2 gives a clear picture on length of use of E-resources by academia of science in universities Andhra Pradesh and Telangana. There are 469 respondents from universities of Andhra Pradesh. Most of the respondents from Andhra Pradesh 251 (53.5%) have experience in using E- resources for more than 2 years, 136 (29.0%) have experience in using E- resources for 1 to 2 years, 59 (12.6%) of the respondents have 6 months to one year experience in using E resources, the remaining 23 (4.9%) of respondents have less than 6 months experience only. There are 458 respondents from universities of Telangana, 291(63.5%) of respondents have experience in using E-resources for more than two years, 98 (21.4%) have experience in using E- resources 1 to 2 years, 51 (11.1%) of the respondents have 6 months to one year experience in using E resources and 41(4.4%) have less than 6 months experience in using E resources. Over all 58.5% respondents from universities of Telangana and Andhra Pradesh have more than two years of experience in using E-resources. A vast majority of the respondents (83.7%), together from Telangana and Andhra Pradesh universities have more than one year experience in using E-resources.

The mean value of the response from Andhra Pradesh is 3.31 and that of Telangana is 3.45, which indicate majority of respondents have one to two years of experience in using E-resources.

Table- 2
Length of experience in using E-resources

S/N	States	Length of use				Total	Mean
		Less than 6 months	Six months to one year	1 to 2 years	More than 2 years		
1	Andhra Pradesh	23 (4.9)	59(12.6)	136(29)	251(53.5)	469(100)	3.31
2	Telangana	18 (3.9)	51(11.1)	98(21.4)	291(63.5)	458 (100)	3.45
3	Total	41(4.4)	110(11.9)	234(25.2)	542(58.5)	927(100)	3.38

Note: Within the parenthesis indicates % (percentage)

6.3. Time spent daily in using E-resources

Table no. 3 gives a clear picture about the amount of time spent on daily basis by the respondents from Universities of Andhra Pradesh and Tengana in using E-resources. There

are 469 respondents from universities of Andhra Pradesh; from the table it is clear that 28(6.0%) respondents from Universities of Andhra Pradesh are using E-resources less than half an hour daily. Exactly 61(13.0%) respondents are using E-resources half an hour to one hour daily. Precisely 163 (34.8%) respondents are found to be using E-resources one hour to two hours daily. Altogether 217 (46.3%) respondents are found to be using E- resources more than two hours daily. In the case of universities of Telangana there are 458 respondents. It is clearly visible from the table that 23 (5.0%) of respondents from Telangana are using E-resources less than half an hour daily. Altogether 42 (9.2%) respondents are using E-resources half an hour to one hour daily. Precisely 104 (22.7%) respondents are found to be using E- resources one hour to two hours daily. Exactly 289 (63.1%) respondents are found to be using E- resources more than two hours daily.

The mean value of the response from is 3.21 and that of Telangana is 3.44, which indicate majority of respondents from Andhra Pradesh and Tengana are using E- resources more than one hour daily.

Table- 3
Time Spent daily in using E-resources

S/N	States	Time Spent Daily				Total	Mean
		Less than half an hour	Half an hour to one hour	One hour to two hours	More than two hours		
1	Andhra Pradesh	28(6.0)	61 (13.0)	163(34.8)	217 (46.3)	469(100.0)	3.21
2	Telangana	23 (5.0)	42 (9.2)	104(22.7)	289(63.1)	458(100.0)	3.44
3	Total	51(5.5)	103(11.1)	267(28.8)	506(54.6)	927(100.0)	3.32

Note: Within the parenthesis indicates % (percentage)

6.4 Impact of use E-resources on Library visits

The introduction of E-resources and advancement in ICT (Information Communication Technology) has totally changed the library scenario. The users can access their desired E-resources even without visiting the library. The current study has examined the impact of E-resources on the respondent’s library visits. The study has rated the impact of library visit as per the following five parameters. They are (i) Extremely decreased (ii) Slightly decreased (iii) Neither increased or decreased (iv) Increased (v) Extremely increased. Table no. 4 gives clear insight on impact of E- resources on respondent’s library visits.

From the table it is clearly visible that 62(13.2%) respondents from Universities of Andhra Pradesh and 60(13.1%) respondents from universities of Telangana have indicated that due to the use of E-resources their library visits has been “Extremely decreased”. Altogether 181(38.6%) respondents from Universities of Andhra Pradesh and 191(41.7%) respondents from universities of Telangana have indicated that their library visits has been “Slightly decreased”. Exactly 69(14.7%) respondents from Universities of Andhra Pradesh and 90(19.7%) respondents from universities of Telangana have indicated that their library visits has “Neither increased nor decreased”. Precisely 99(21.1%) respondents from Universities of Andhra Pradesh and 67(14.6%) respondents from universities of Telangana have indicated that their library visits has been “Increased”. In total 58(12.4%) respondents from Universities of Andhra Pradesh and 50(10.9%) respondents from universities of Telangana have indicated that their library visits has been “Extremely increased”.

The mean value of the frequencies of library visit from Universities of Andhra Pradesh is 2.62 and that of Universities of Telangana is 2.81. The mean value from both the state

indicates that there is a slight decrease in library visit among the respondents from Universities of Andhra Pradesh and Universities of Telangana due to the use of E- resources.

Table – 4
Impact of use of E-resources on Library visits

S/N	States	Frequency of library visits					Total	Mean
		Extremely decreased	Slightly decreased	Neither increased or decreased	Increased	Extremely increased		
1	Andhra Pradesh	62(13.2)	181(38.6)	69(14.7)	99(21.1)	58(12.4)	469 (100)	2.62
2	Telangana	60(13.1)	191(41.7)	90(19.7)	67(14.6)	50(10.9)	458(100)	2.81

Note: Within the parenthesis indicates % (percentage)

Key:- 1- Extremely decreased, 2- Slightly decreased, 3- Neither increased or decreased, 4- Increased. 5- Extremely increased

6.5 Impact of use of E-resources on print reading habits

The print reading habit of the library users are gradually changing due to the availability of documents in various formats. The current study has examined the impact of use of E-resources on respondent's print reading habits. The study has rated the impact of print reading habits as per the following five parameters. They are (i) Extremely decreased (ii) Slightly decreased (iii) Neither increased or decreased (iv) Increased (v) Extremely increased. Table no. 5 gives a clear insight on impact of E-resources on respondent's print reading habits.

From the table it is clearly visible that 70(14.9%) respondents from Universities of Andhra Pradesh and 58(12.7%) respondents from universities of Telangana have indicated that due to the use of E- resources their print reading has been "Extremely decreased". Altogether 149(31.8%) respondents from Universities of Andhra Pradesh and 212(46.3%) respondents from universities of Telangana have indicated that their print reading has been "Slightly decreased". Exactly 100(21.3%) respondents from Universities of Andhra Pradesh and 89(19.4%) respondents from universities of Telangana have indicated that their print reading has "Neither increased nor decreased". Precisely 100(21.3%) respondents from Universities of Andhra Pradesh and 62(13.5%) respondents from universities of Telangana have indicated that their print reading has been "Increased". In total 50(10.7%) respondents from Universities of Andhra Pradesh and 37(8.1%) respondents from universities of Telangana have indicated that their print reading has been "Extremely increased".

The mean value of the response from Universities of Andhra Pradesh is 2.88 and that of Universities of Telangana is 2.52. The mean value from both the state indicates that there is a slight decrease in print reading habit among the respondents from Universities of Andhra Pradesh and Universities of Telangana due to the use of E-resources.

Table 5
Impact of use of E- resources on print reading habits

S/N	States	Extremely decreased	Slightly decreased	Neither increased or decreased	Increased	Extremely increased	Total	Mean
1	Andhra Pradesh	70(14.9)	149(31.8)	100(21.3)	100(21.3)	50(10.7)	469(100)	2.88
2	Telangana	58(12.7)	212(46.3)	89(19.4)	62(13.5)	37(8.1)	458(100)	2.52

Note: Within the parenthesis indicates % (percentage)

Key: - 1- Extremely decreased, 2- Slightly decreased, 3- Neither increased or decreased, 4- Increased. 5- Extremely increased

6.6 Impact of E-resources use on academic performance

The advancement in ICT (Information Communication Technology) has made the availability of documents any time, beyond the limitation of geographical boundaries. The users can access their desired E-resources any time without visiting the library. The current study has examined the impact of use of E-resources on the respondent's academic performance. The study has rated the impact of academic performance as per the following five parameters. They are (i) Extremely decreased (ii) Slightly decreased (iii) Neither increased or decreased (iv) Increased (v) Extremely increased. Table no. 6 gives clear insight on impact of E-resources on respondent's academic performance.

From the table it is clearly visible that 16(3.4%) respondents from Universities of Andhra Pradesh and 11(2.4%) respondents from universities of Telangana have indicated that due to the use of E-resources their academic performance has been Extremely decreased. Altogether 25(5.3%) respondents from Universities of Andhra Pradesh and 16(3.5%) respondents from universities of Telangana have indicated that their academic performance has been Slightly decreased. Exactly 118(25.2%) respondents from Universities of Andhra Pradesh and 142(31.0%) respondents from universities of Telangana have indicated that their academic performance has Neither increased nor decreased. Precisely 187(39.9%) respondents from Universities of Andhra Pradesh and 197(43.0%) respondents from universities of Telangana have indicated that their academic performance has been Increased. In total 123(26.2%) respondents from Universities of Andhra Pradesh and 92(20.1%) of respondents from universities of Telangana have indicated that their academic performance has been Extremely increased.

The mean value of the response from Universities of Andhra Pradesh is 3.80 and that of Universities of Telangana is 3.75. The mean value from both the state indicates that, there is a slight increase in the academic performance among the respondents from Universities of Andhra Pradesh and Universities of Telangana due to the use of E-resources.

Table. 6
Impact of E -resources use on academic performance

S/N	Universities	Extremely decreased	Slightly decreased	Neither increased or decreased	Increased	Extremely increased	Total	Mean
1	Andhra Pradesh	16(3.4)	25(5.3)	118(25.2)	187(39.9)	123(26.2)	469(100.0)	3.80
2	Telangana	11(2.4)	16(3.5)	142(31.0)	197(43.0)	92(20.1)	458 (100.0)	3.75

Note: Within the parenthesis indicates % (percentage)

Key:- 1- Extremely decreased, 2- Slightly decreased, 3- Neither increased or decreased, 4- Increased. 5- Extremely increased

6.7 Impact of use of E- resources on information searching and retrieval skills

The current study has examined the impact of use of E- resources on respondent's information searching and retrieval skills. The study has rated the impact on information searching and retrieval skills as per the following five parameters. (i) Extremely decreased (ii) Slightly decreased (iii) Neither increased or decreased (iv) Increased (v) Extremely increased. Table no.7 gives a clear insight on impact of E-resources on respondent's information searching and retrieval skills.

From the table it is clearly visible that 18(3.8%) respondents from universities of Andhra Pradesh and 16(3.5%) respondents from universities of Telangana have indicated that due to

the use of E-resources their information searching and retrieval skills has been “Extremely decreased”.

Altogether 24(5.1%) respondents from universities of Andhra Pradesh and 30 (6.6%) respondents from universities of Telangana have indicated that their information searching and retrieval skills have been Slightly decreased. Exactly 126(26.9%) of respondents from Universities of Andhra Pradesh and 136(29.7%) respondents from universities of Telangana have indicated that their information searching and retrieval skills has “Neither increased nor decreased”. Precisely 180(38.4%) respondents from Universities of Andhra Pradesh and 191(41.7%) respondents from universities of Telangana have indicated that due to the use of E- resources their information searching and retrieval skills have been “Increased”. In total 121(25.8%) respondents from Universities of Andhra Pradesh and 85(18.6%) respondents from universities of Telangana have indicated that due to the use of E-resources their information searching and retrieval skills has been “Extremely increased”.

The mean value of the response from Universities of Andhra Pradesh is 3.77 and that of Universities of Telangana is 3.65. The mean value from both the state indicates that there is a increase in information searching and retrieval skills among the respondents due to the use of E-resources.

Table-7
Impact of E-resources on information searching and retrieval skills

S/N	States	Extremely decreased	Slightly decreased	Neither increased or decreased	Increased	Extremely increased	Total	Mean
1	Andhra Pradesh	18(3.8)	24(5.1)	126(26.9)	180(38.4)	121(25.8)	469(100)	3.77
2	Telangana	16(3.5)	30 (6.6)	136(29.7)	191(41.7)	85(18.6)	458 100)	3.65

Note: Within the parenthesis indicates % (percentage)

Key: - 1- Extremely decreased, 2- Slightly decreased, 3- Neither increased or decreased, 4- Increased. 5- Extremely increased

7. Findings

The study found that 53.5% respondents from Andhra Pradesh and 63.5% respondents from Telangana have more than years of experience in using E-resources. Altogether 46.3% respondents from Andhra Pradesh and 63.1% respondents from Telangana are using E-resources more than one hour daily. The mean value of the frequencies of library visit from Universities of Andhra Pradesh and Telangana is 2.62 and 2.81 respectively. The mean value from both the state indicates that there is a slight decrease in library visit among the respondents from Universities of Andhra Pradesh and Universities of Telangana due to the use of E-resources. The mean value of impact of E-resources on print reading habit from universities of Andhra Pradesh is 2.88 and that of Universities of Telangana is 2.52. The mean value from both the states indicates that there is a slight decrease in print reading habit among the respondents from both the states. The mean value of impact of use of E-resources on academic performance from Universities of Andhra Pradesh is 3.80 and that of Universities of Telangana is 3.75. The mean value from both the state indicates that, there is a slight increase in the academic performance among the respondents from both the states. The mean value of impact of use of E-resources on information searching and retrieval skills from Universities of Andhra Pradesh is 3.77 and that of Universities of Telangana is 3.65. The mean value from both the state indicates that there is slight increase in information searching and retrieval skills among the respondents due to the use of E-resources.

8. Conclusion

Though much studies has been done on the use of E- resources in various universities, but very few attempts were made to study the use of E-resources by academia of sciences in universities. The result of this study will give an insight into the use of E-resources by academia of science in universities of Andhra Pradesh and Telangana. The findings of the study will be helpful to the stake holders in providing better E-resources facilities and services to academia of science in Universities. The finding of the study will be helpful in designing orientation programs and information literacy program especially for academia of science in universities.

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