

Does e-Resources Access Improve Academic and Research Productivity? Evidence based on Opinion of e-Resource users at AYUSH Institutions

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Abstract

e-Resources nowadays act as a new platform for source of information. Users are changing their pattern of accessing information from print format to electronic. Knowledge resource centres are upgrading their resource collection and pattern of dissemination of information. Obviously, AYUSH Institutions (NIA, NIS, NIU and NIH) libraries are working hard to overcome the challenges of meeting changing information needs and seeking to identify the attitudes of the users toward electronic resources owing to their perceived effect on research. Hence, the present study explored the perceived effect of accessibility and utilization of electronic resources on research productivity in AYUSH Institutions.

Keywords: AYUSH Institutions, E-Resources, Research Productivity

1. Introduction

Electronic Resources, called as e-Resources, play a hegemonic role in the growth of academic and research activities. The invention/innovation in ICTs and electronic information resources have made significant changes in the landscape of academic and research activities. After the arrival of ICTs, the users swap their pattern of accessing resources from print to electronic format. Thus, information available or accessed through electronic gadgets is called as electronic resource: computers, CD-ROMs, the Internet, and other digital networks are few examples. Generally, electronic resources are widely accessible through the World Wide Web (www), called as Internet, a reservoir of information. During the last two decades, electronic publishing has significantly revolutionized the mode of access and

use of information in academic and research arena. Almost 99 percent books and journals which are now being published on the Internet are referred to as e-books and e-journals. Hence, e-resources predominantly used by academicians and researchers are e-books, e-journals, online databases, CD-ROM databases, e-conference papers, e-theses/dissertations, and e-newspapers/e-magazines. Electronic resources have narrow down the gap in accessing information; it provides an efficient way of accessing research information beyond institutional boundaries. Peter, Hodder, and Hodder (2010) discussed the benefits of research productivity at universities, especially in New Zealand. Besides, access to information and information use is postulated to be a correlate of research productivity. King and Griffiths (1989) used “reading” as a measure of information use among academic staff. Reading is the ability to extract information from a variety of information sources/



resources, particularly books/journals (e-books/e-journals), primarily to accomplish a research activity by academic staff. The study found that reading books/journals has had a perceived positive effect on the research productivity of academic staff. They proposed that academics who read a great deal are also likely to have a high level of research productivity. Thus, in the emerging electronic information environments at AYUSH Institutions, electronic resources now provide platforms for accessibility and utilization of information in the research process, as they are perceived to have a positive effect on research productivity. Hence, within the past two decades, scholars have been conducting users' studies to determine the relationship between accessibility and use of electronic resources and research productivity in a global perspective at universities. Arguably, most of these studies dealt with the perceived effect of electronic resources on research productivity, and the goal of this study is, therefore, to examine the e-resource users opinion on research productivity and the same has been studied with the users in AYUSH Institutions (NIA, NIS, NIU, and NIH).

2. Literature Review

There is plethora of research studies available in the research problem concerned. Here some of the most cited research papers are reviewed. Tenopir (2003) stated that the use of electronic journals is increasing every year. She pointed out that among faculty members, graduate students, and other professionals, higher use of electronic journals is accompanied by a decrease in visits to the physical library. Similarly, Islam and Panda (2007) found that the use of electronic information is increasing to the extent that people believe that electronic materials

will eventually replace the traditional library and users' needs not go there to find and collect the information they need. Veenapani, Singh and Devi (2008) observed in their study that e-resources are highly useful for the research and academic community in the modern context. Haridasan and Khan (2009) also noted that majority of the social science academicians and researchers, who use NASSDOC (National Social Science Documentation Centre) library, were satisfied with the e-resources available to them by the library. Liu (2009) highlighted that in recent days libraries are spending significant amounts of their budget to procure or access electronic resources. Whereas some of the studies have emphasized that print resources are still an important medium of information. Marouf and Anwar (2010) studied the information seeking behavior of social science faculty at Kuwait University. They found that these respondents heavily dependents on books and journals purposes. Madhusudhan (2010) in his study found that electronic resources have become an integral part of the information needs of research scholars at Kurukshetra University. He also revealed that e-resources can be a good substitute for conventional resources, if the access is fast, and more computer terminals are installed to provide fast access to e-resources. Hence, a positive shift from print resources to electronic resources has been observed.

3. Methods and Materials

The study adopts experimental research methodology. For the study, the users groups are classified into Faculty members (Professor, Associate Professor, and Assistant Professor) and Student category (PG Student and Research

Scholars). Simple random-sampling technique was adopted to select the sample respondents. There are 759 academicians and researcher pursuing their academic and research pursuits in the National Institute of Ayurveda Library, National Institute of Unani Library, National Institute of Siddha Library and National Institute of Homoeopathy Library, who are called as population of the study. The population of the study comprises of PG Students and Scholars, Assistant Professors, Associate Professors, and Professors. The questionnaire distributed to all the e-Resource users in the four institutions. The respondents were also asked to respond to questions to assess their extent of accessibility and use of electronic resources in research, as well as the perceived effect of electronic resources on their research productivity. Out of 342 questionnaires distributed to e-Resource users in NIA Library, 108 questionnaires are received and the response rate was 31.5%. 110 questionnaires have been distributed to the respondents of NIU Library, 101 questionnaires are received and the responds rate was 91.8 %, 169 questionnaires have been distributed to the respondents of NIS Library, 123 filled questionnaires were received back and the response rate was 91.8%. Approximately, almost cent present response rate is received from National Institute of Unani Medicine. In aggregate, 759 questionnaires were distributed, out of which 429 filled questionnaires were received from the respondents of all the libraries and the aggregate response rate was 56.52%.

4. Objectives of the paper

The objectives of the paper are:

- ❖ To study the pattern of accessing e-Resources in AYUSH Institutions.

- ❖ To examine the relationship between e-Resource and research productivity.

5. Hypothesis

Based on the literature review and objectives of the study, the following hypotheses are framed for the paper.

- ❖ There is no significant difference in the average scores between Gender.
- ❖ There is no significant difference in the average scores between users' academic status.
- ❖ There is no significant difference in the average scores between institutions
- ❖ There is no significant difference in the average scores between age group.
- ❖ There is no significant difference in the average scores between research experiences.
- ❖ There is no significant difference in the average scores between number of times visited.
- ❖ There is no significant difference in the average scores between times spending in the library.

7. Results and Discussion

It is found in the study that there are 54.3% male respondents and 45.7% female respondents. 20% respondents are in the age group of below 25 years; 55.5% are in 26-35 years; 14.7% fall in the age category of 36-45 years; 46-55 age category is represented by 6.1% of the respondents and is followed by 3.7% are found in the age category of above 55 years. It is evident from the study that majority of the respondents are found in the age category of 26-35 years. The average age of the respondents is computed to be 25 years in NIA; 22 years in NIH; 23 years in NIU and 28 years in NIS.

Designation reflects academic position of a person working in the Institutions. Among academicians, there are five hierarchical structure followed: Professor, Associate Professor, and Assistant Professor. In the study, 68.3% respondents are Post-Graduate Students; 4.7% are Ph.D Scholars; 7% are Assistant Professors; 7.5% are Associate Professors and is followed by 2.6% Professors. It is highlighted in the study that participation of PG students are more in the survey as compared with rest of the categories. Thus, mixed nature of respondents represented in the survey.

Table 1: Descriptive Statistics

Variables	Mean	Standard deviation
Nature	17.757	3.209
Purpose	52.708	13.901
Productivity	16.909	2.859

N=429

The opinion of the users with respect to nature of information required, purpose of seeking information and usefulness / productivity of the e-Resources are assessed through 5-point Likert scaling pattern. Each category comprises of numerous statements which are inter-linked. For example, nature of information required category comprises of 13 statements; purpose of seeking information is composed of 16 statements and usefulness of e-Resources is studied with 14 statements. As we mentioned earlier that the statements are measured in scaling pattern, therefore weightage has been given to each responses and finally Weighted Average Score (WAS) is computed for each statements. Accordingly, average score is computed for the variables nature (17.75), Purpose (52.07) and Productivity (16.90).

7. Reliability Statistics

Reliability is an important test in multivariate Analysis. It is generally used to examine the reliability of the statements grouped as a variable, for further statistical applications such as Factor Analysis, Clustering, etc. Cronbach Alpha test is universally used for checking reliability of the variables. 0.5 is assumed to be a standardized threshold value for alpha test. If the computed alpha value is greater than the threshold value, then it can be considered as good, vice versa. In the study, the computed alpha value for all the considered parameters is greater than 0.05, therefore, the study find that the statements are highly reliable.

Table 2: Reliability Statistics

Parameters	Alpha	No .of Items
Productivity	0.712	14
Nature	0.789	13
Purpose	0.913	16

Hypothesis 1: There is no significant difference in the average scores between Gender.

Variable	Group	N	Mean	Std.Dev	Std.Error	T
Nature	Male	233	17.987	3.426	0.226	1.618(0.106)
	Female	196	17.484	2.865	0.204	
Purpose	Male	196	54.725	14.298	0.936	3.314**(0.001)
	Female	196	50.311	13.049	0.932	
Productivity	Male	196	16.944	2.741	0.179	0.277(0.782)
	Female	196	16.867	2.99	0.214	

From the table, it is seen that the average score obtained by the male respondents is greater than the female respondent in all categories of variable. The computed t value is significant (3.314) with respect to purpose of accessing e-resources. It shows that there is a difference between male and female respondents with respect to purpose of accessing e-resources. But, no significant difference is observed between male and female respondents with regard to nature and productivity of e-resources.

than student category in all categories of variable. The computed t value is significant (5.017) with respect to nature of information seek. Purpose of accessing e-resources (9.238) is also highly significant at 0.01 level of significance. It reveals that there is a difference between faculty and student categories with respect to nature of seeking information and purpose of accessing e-resources. But, no significant difference is observed between the two categories of respondents with respect to productivity of e-resources.

Hypothesis 2: There is no significant difference in the average scores between users' academic status.

Variables	Designation	N	Mean	Std.Dev	Std.Error	T	Sig
Nature	Students	313	17.29	3.049	0.172	-5.017	.00
	Faculty	116	19.00	3.312	0.307		
Purpose	Students	313	49.25	13.27	0.750	-9.238	.00
	Faculty	116	62.01	11.00	1.22		
Productivity	Students	313	16.87	2.65	0.246	.169	.866
	Faculty	116	16.92	2.93	0.165		

It is clear from the computation that the average score obtained by the faculty members is greater

Hypothesis 3: There is no significant difference in the average scores between institutions

Variable	Groups	Sum of squares	df	MeanSquare	F	Sig
Nature	Between	40.86	3	13.622	1.325	.266
	Within	4367.923	425	10.277		
Purpose	Total	4408.788	428			
	Between	2326.208	3	775.403	4.100	.007
Usefulness of e-Resources	Within	80380.370	425	189.130		
	Total	82706.578	428			
	Between	371.023	3	123.674	16.801	.000
	Within	3128.432	425	7.361		
	Total	3499.455	428			

The finding of the study is consistent with the findings of the other scholars who have done the research in the same aspects. They claimed that electronic resources have a perceived positive effect on research productivity at universities around the world (Costa & Meadows, 2000; Heterick, 2002; Jankowska, 2004; Mahajan, 2006; Mahmood et al.,

2011; Vakkari, 2008). It is found from the study that there is no significant difference in the nature of information ($F=1.325$; $p>0.05$) and purpose of seeking information ($F=4.10$; $p>0.05$) with respect to institutions (NIA, NIS, NIU and NIH). But, significant difference is found in the mean score of usefulness of e-resources in research activities with regard to institution ($F=16.801$; $p<0.05$).

Hypothesis 4: There is no significant difference in the average scores between age group.

Variable	Groups	Sum of squares	df	Mean Square	F	Sig
Nature	Between	126.936	4	31.73410.099	3.142	.015
	Within	4281.852	424			
Purpose	Total	4408.788	428			
	Between	7713.386	4	1928.346176.871	10.903	.000
Usefulness of e-Resources	Within	74993.192	424			
	Total	82706.578	428			
	Between	69.5999	4	17.4008.089	2.151	.074
	Within	3429.856	424			
	Total	3499.455	428			

It is found from the study that there is significant difference in the nature of information ($F=3.142$; $p<0.05$) and purpose of seeking information ($F=10.903$; $p<0.05$) with respect to age category of the respondents. But no significant difference is found in the mean score of usefulness of e-resources in research activities with regard to age category ($F=2.151$; $p>0.05$).

It is found from the study that there is no significant difference in the nature of information ($F=0.562$; $p>0.05$) and purpose of seeking information ($F=1.314$; $p>0.05$) and usefulness of e-Resources ($F=0.643$; $p>0.05$) with respect to number of times visited the library.

Hypothesis 5: There is no significant difference in the average scores between research experiences

Variable	Groups	Sum of squares	df	Mean Square	F	Sig
Nature	Between	453.706	7	64.8159.394	6.899	.000
	Within	3955.081	421			
	Total	4408.788	428			
Purpose	Between	8567.464	7	1223.923176.102	6.950	.000
	Within	74139.114	421			
	Total	82706.578	428			
Usefulness of e-Resources	Between	122.506	7	17.5018.021	2.182	.035
	Within	3376.948	421			
	Total	3499.455	428			

It is found from the study that there is significant difference in the nature of information ($F=6.899$; $p<0.05$) and purpose of seeking information ($F=6.950$; $p<0.05$) and usefulness of e-Resources ($F=2.182$; $p<0.05$) with respect to research experiences.

Hypothesis 6: There is no significant difference in the average scores between number of times visited

Variable	Groups	Sum of squares	df	Mean Square	F	Sig
Nature	Between	29.091	5	5.81810.354	.562	.729
	Within	4379.697	423			
	Total	4408.788	428			
Purpose	Between	1264.513	5	252.903192.534	1.314	.257
	Within	81442.065	423			
	Total	82706.578	428			
Usefulness of e-Resources	Between	26.633	5	5.3278.210	.643	.663
	Within	3472.822	423			
	Total	3499.455	428			

Hypothesis 7: There is no significant difference in the average scores between times spending in the library.

Variable	Groups	Sum of squares	df	Mean Square	F	Sig
Nature	Between	136.438	4	34.11010.076	3.385	.010
	Within	4272.349	424			
	Total	4408.788	428			
Purpose	Between	609.916	4	152.479193.624	.787	.534
	Within	82096.662	424			
	Total	82706.578	428			
Usefulness of e-Resources	Between	51.560	4	12.8908.132	1.585	.177
	Within	3447.894	424			
	Total	3499.455	428			

It is found from the study that there is a significant difference in the nature of information ($F=3.385$; $p<0.05$). But, no significant difference is found between time spending by the respondents and purpose of seeking information ($F=0.787$; $p>0.05$), usefulness of e-Resources ($F=1.585$; $p>0.05$) with respect to number of times spending in the library.

8. Concluding Observations

Information is vital for all activities; access to information is essential for academic and research activities. Electronic resources nowadays act as a new platform for source of information. Obviously, AYUSH Institutions (NIA, NIS, NIU and NIH) libraries are working hard to overcome the challenges of meeting changing information needs and seeking to identify the attitudes of the users toward electronic resources owing to their perceived effect on research. Hence, the present study explored the perceived effect of accessibility and utilization of electronic resources on research productivity in

AYUSH Institutions. It was found that there was a significant perceived positive effect of accessibility and use of electronic resources on research productivity. However, the findings of the study revealed that there was no significant perceived effect on accessibility and utilization of electronic resources on the research productivity of the respondents by discipline in the survey. Based on the findings of the study, effective development of digital libraries in AYUSH Institutions would ameliorate the problems of accessibility and utilization of electronic resources by academic staff in research. Hence, the AYUSH Institution's libraries should develop a relevant electronic collection development policy to support the sustainable subscription of electronic resources across academic disciplines to enhance an efficient research process.

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