

RELEVANCE OF ICT TOOLS AND ITS IMPACT ON THE ACADEMIC USE OF AGRICULTURAL LIBRARIES: A CHI-SQUARE STUDY ANALYSIS

Dr. Surender Kumar

Assistant Librarian

College of Agriculture, Kotputli, S. K. N. Agriculture University, Jobner-Rajasthan

Email: surenderkumar2009@gmail.com

and

Dr. Raj Boria

Assistant Professor & H.O.D.

Vikram University, Ujjain (M.P.)

Email: raj.boria@gmail.com

Abstract: A study had been made on users in context to use of ICT tools in five library of agricultural universities of India. No doubt with the adoption of changing technologies with various ICT tools triggers users to make use of academic libraries resources in their reading learning and research skills. A questionnaire method has been used to explore the use, utility and impact of ICT tools on users with the help of 150 respondents of 60 UG students, 60 PG students and 30 Ph.D. scholars from five libraries of agricultural university. A detail study has been made and analyzed with help various tables and graphs to find out the use, utility and impact of ICT tools on users of five agricultural university libraries.

Keywords: ICT, Chi-square, Agriculture, Libraries, Universities

1.0 Introduction

In the current era of information, one of the most vital components of existence and survival is knowledge. In order to function in all aspects of daily life, we require information. Every second, enormous amounts of information are produced. An explosion of information is occurring. These days, there are "information rich" and "information poor" people. Information is now transmitted more quickly thanks to technical advancements, which eventually leads to the creation of more information.

Agriculture is essential to the survival of human society. The economies of the majority of nations are dependent on agriculture. Since 80% of the population in India lives in villages and depends solely on agriculture, research and development in this area is crucial. India is an entirely agriculturally based nation. ICAR was founded to oversee and fund agriculture research institutes in India and to administer the country's agricultural growth.

Its own agricultural research institutes are another feature. Numerous other institutions in the field are also funded by it. Research on agriculture is also conducted by agricultural universities. The majority of agricultural institutions were founded by state governments in order to fulfill their unique needs for agricultural research inside the states. For example, four state institutions in the states of Punjab, Haryana, and Madhya Pradesh are actively involved in and contribute to agricultural research in these regions. These institutions have excellent libraries that are used to disseminate information using contemporary technologies. Their libraries can be consulted both online and offline and contain a considerable amount of books, journals, and databases. The university staff, students, and readers have access to these libraries.

With the information explosion, information dissemination has also become a problem. It requires some skills by the users, to gather information from piles of information, in their own ways using various skills. Which differ from individual to individual. The main object of the study is to find out the ways of gathering information what we call information gathering behaviour.

The purpose of the study is to ascertain how students at agricultural universities in Punjab, Haryana, and Madhya Pradesh use and are affected by information and communication technology.

2.0 Hypotheses

1. The following hypotheses have been formulated to be tested using appropriate statistical techniques.
2. There is no significant difference between library visits and academic status of the respondents in Agricultural University Libraries of Punjab, Haryana and Madhya Pradesh.

3. There is no significant difference between awareness about ICT and information seeking behaviour of respondents in Agricultural University Libraries.
4. There is no significant difference between the academic status and satisfaction about present library services & facilities in Agricultural University Libraries.
5. There is no significant difference between the academic status and sources of information in Agriculture University Libraries.
6. There is no significant difference between place of Internet used and university.
7. There is no significant difference between place of Internet used and academic status of the respondents.

3.0 Methodology

In this study, 60 UG students, 60 PG students and 30 Ph.D. scholars (150 respondents) have been selected from each university by stratified sampling. For research purpose a finalized questionnaire has been prepared for UG/PG/Ph.D. scholars. Before finalizing the questionnaire, an attempt was made to get it reviewed by the experts in the field. The suggestions thus obtained have been incorporated to improve the strength of the questionnaire. In each strata respondents have been selected by random sampling using tipit method. Out of 600 questionnaires distributed 550 (332 males and 218 females) responded. The response rate is 92%. Another questionnaire has been finalized for librarians of these universities. Questionnaires were circulated to respondents through personnel meetings with individuals so selected.

The study is based both on primary and secondary sources. Primary data have collected by contacting the students of these Agricultural Universities with the help of questionnaires. Books, periodicals and other available literature on the subjects have been used as secondary source. 550 collected questionnaires have been coded. The data found have been tabulated and analyzed using the Statistical Package for the Social Sciences (SPSS) version 20. Hypotheses have been tested and findings were drawn in the light of the objectives of the investigation. Tables, charts and figures have been used everywhere necessary to make the presentation clear, simple and lucid. A description and discussion of tables and diagrams follows immediately. The Statistical methods have been used: Frequency, Percentage, Standard Deviation and Chi-square Test. The significant values that fall below the 0.05 level are accepted.

4.0 Scope And Limitations Of The Study

India has 64 universities offering programs in agricultural and related sciences, according to a list on the ICAR website. Punjab has two agricultural universities, Madhya Pradesh has three, and Haryana has three. Veterinary sciences and horticulture are examples of allied subjects taught at two universities in Haryana, one in Madhya Pradesh, and one in Punjab. Two universities of Haryana, one of Madhya Pradesh and one Punjab are in Allied Subjects such as veterinary sciences and horticulture. Since these are specialized universities, they are not included in this study. There are three central universities in agricultural in India. Deemed University of Haryana specializes in dairy science so it is out of scope of this thesis. Thus four universities in agricultural sciences are homogenous in nature and have been selected for this study.

The main objective of this study is to determine how ICT is used and how it affects students at the agricultural universities in Punjab, Haryana, and Madhya Pradesh who are seeking information. In this study, only agricultural universities from these three states have been chosen. Research has been conducted at 1. Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur; 2. Punjab Agricultural University, Ludhiana; 3. Chaudhary Charan Singh Haryana Agricultural University, Hisar; and 4. Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior, Madhya Pradesh.

Table-1. H₀ There is no significant difference between library visits and academic status of the respondents in Agricultural University Libraries of Punjab, Haryana and Madhya Pradesh.

S. N.	Library Visits	Academic Status			Total
		UG	PG	Ph.D. Scholar	
1	Daily	74 32.9%	110 48.9%	41 18.2%	225 100.0%
2	Twice or more in a week	98 49.0%	68 34.0%	34 17.0%	200 100.0%
3	Weekly	28 32.9%	40 47.1%	17 20.0%	85 100.0%
4	Rarely	19 47.5%	11 27.5%	10 25.0%	40 100.0%

Total	219 39.8%	229 41.6%	102 18.5%	550 100.0%
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Chi-Square Tests

S. N.	Description	Results
1	Calculated Value of Pearson χ^2	17.001
2	Table Value	7.815
3	Degree of Freedom	3
4	Result	χ^2 is rejected on 0.05 per cent level of significant

In the above table Pearson chi-square test at degree of freedom 3 and 0.05 level of significant, table value is 7.815 which is lesser than calculated value 17.001, so H_0 is rejected. Therefore, it is concluded that there is a important relationship between the library visits and academic status.

Table-2. H_0 There is no significant difference between ICT awareness and information seeking behaviour of respondents in Agricultural University Libraries.

S. N.	Awareness about ICT	Formats for seeking information			Total
		Print	Digital	Both	
1	Yes	69 16.5%	50 12.0%	299 71.5%	418 100.0%
2	No	26 19.7%	17 12.9%	89 67.4%	132 100.0%
	Total	95 17.3%	67 12.2%	388 70.5%	550 100.0%

Chi-Square Tests

S. N.	Description	Results
1	Calculated Value of Pearson χ^2	.900
2	Table Value	5.991
3	Degree of Freedom	2
4	Result	χ^2 is accepted on 0.05 per cent level of significant

In the above table Pearson chi-square test at degree of freedom 2 and 0.05 level of significant, table value is 5.991 that is lesser than calculated value .900, so H_0 is accepted. Therefore, it is concluded that there is no significant difference between ICT awareness and information seeking behaviour of respondents in Agricultural University Libraries.

Table-3. H_0 There is no significant difference between academic status and satisfaction about present library services & facilities in Agricultural University Libraries.

S. N.	Academic Status	Satisfaction				Total
		Fully Satisfied	Satisfied	Satisfied nor Dissatisfied	Dissatisfied	
1	UG	39 17.8%	105 47.9%	44 20.1%	31 14.2%	219 100.0%
2	PG	61 26.6%	122 53.3%	33 14.4%	13 5.7%	229 100.0%

3	Ph.D. Scholar	25 24.5%	54 52.9%	13 12.7%	10 9.8%	102 100.0%
	Total	125 22.7%	281 51.1%	90 16.4%	54 9.8%	550 100.0%

Chi-Square Tests

S. N.	Description	Results
1	Calculated Value of Pearson χ^2	16.127
2	Table Value	12.592
3	Degree of Freedom	6
4	Result	χ^2 is rejected on 0.05 per cent level of significant

In the above table Pearson chi-square test at degree of freedom 6 and 0.05 level of significant, table value is 12.592 that is lesser than calculated value 16.127, so H_0 is rejected. Therefore, it is concluded that there is significant difference between academic status and satisfaction about present library services & facilities in Agricultural University Libraries.

Table-4. H_0 there is no significant difference between academic status and sources of information in Agricultural University Libraries.

S. N.	Sources of Information about latest library materials	Academic Status			Total
		UG	PG	Ph.D. Scholar	
1	Through classmates	71 55.9%	42 33.1%	14 11.0%	127 100.0%
2	Through new arrival display	24 32.4%	31 41.9%	19 25.7%	74 100.0%
3	Through senior students	24 41.4%	25 43.1%	9 15.5%	58 100.0%
4	Through teachers/library staff	32 41.0%	36 46.2%	10 12.8%	78 100.0%
5	Through website	16 28.6%	16 28.6%	24 42.9%	56 100.0%
6	Social networking group	10 41.7%	8 33.3%	6 25.0%	24 100.0%
7	Through classmates, Through senior students & Social networking group	0 0.0%	4 66.7%	2 33.3%	6 100.0%
8	Through classmates, Through senior students, through teachers/library staff & Social networking group	4 22.2%	11 61.1%	3 16.7%	18 100.0%
9	Through classmates, Through website & Social networking group	3 27.3%	4 36.4%	4 36.4%	11 100.0%
10	Through teachers/library staff, Through website & Social networking group	2 15.4%	8 61.5%	3 23.1%	13 100.0%
11	Through new arrival display & Through teachers/library staff	1 12.5%	6 75.0%	1 12.5%	8 100.0%

12	Through classmates & Through senior students	15 68.2%	7 31.8%	0 0.0%	22 100.0%
13	Through classmates, Through senior students & Through website	17 34.0%	26 52.0%	7 14.0%	50 100.0%
14	Through classmates & Through new arrival display	0 0.0%	5 100.0%	0 0.0%	5 100.0%
	Total	219 39.8%	229 41.6%	102 18.5%	550 100.0%

Chi-Square Tests

S. N.	Description	Results
1	Calculated Value of Pearson χ^2	77.336
2	Table Value	38.885
3	Degree of Freedom	26
4	Result	χ^2 is rejected on 0.05 per cent level of significant

In the above table Pearson chi-square test at degree of freedom 26 and 0.05 level of significant, table value is 38.885 that is lesser than calculated value 77.336, so H_0 is rejected. Therefore, it is concluded that there is significant difference between academic status and sources of information in Agricultural University Libraries.

Table-5. H_0 there is no significant difference between places of used Internet in universities.

S. N.	Place of using Internet	Universities				Total
		(PAU) Ludhiana	CCS HAU, Hisar	JNKVV, Jabalpur	RVSKVV, Gwalior	
1	At home	46 34.3%	24 17.9%	32 23.9%	32 23.9%	134 100.0%
2	Library	23 21.5%	28 26.2%	23 21.5%	33 30.8%	107 100.0%
3	Cafe	1 5.3%	4 21.1%	6 31.6%	8 42.1%	19 100.0%
4	Hostel	49 24.0%	67 32.8%	55 27.0%	33 16.2%	204 100.0%
5	Library & Hostel	1 3.7%	7 25.9%	9 33.3%	10 37.0%	27 100.0%
6	Library, Cafe & Hostel	2 18.2%	3 27.3%	4 36.4%	2 18.2%	11 100.0%
7	At Home, Library, Cafe & Hostel	19 52.8%	8 22.2%	6 16.7%	3 8.3%	36 100.0%
8	At Home & Library	4 33.3%	1 8.3%	4 33.3%	3 25.0%	12 100.0%
	Total	145 26.4%	142 25.8%	139 25.3%	124 22.5%	550 100.0%

Chi-Square Tests

S. N.	Description	Results
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1	Calculated Value of Pearson χ^2	51.995
2	Table Value	32.671
3	Degree of Freedom	21
4	Result	χ^2 is rejected on 0.05 per cent level of significant

In the above table Pearson chi-square test at degree of freedom 21 and 0.05 level of significant, table value is 32.671 that is lesser than calculated value 51.995, so H_0 is rejected. Therefore, it is concluded that there is significant difference between places of used Internet in universities.

Table-6. H_0 there is no significant difference between place of used Internet and academic status of the respondents.

S. N.	Place of using Internet	Academic status			Total
		UG	PG	Ph.D. Scholar	
1	At home	66 49.3%	53 39.6%	15 11.2%	134 100.0%
2	Library	30 28.0%	47 43.9%	30 28.0%	107 100.0%
3	Cafe	5 26.3%	11 57.9%	3 15.8%	19 100.0%
4	Hostel	96 47.1%	71 34.8%	37 18.1%	204 100.0%
5	Library & Hostel	12 44.4%	11 40.7%	4 14.8%	27 100.0%
6	Library, Cafe & Hostel	1 9.1%	6 54.5%	4 36.4%	11 100.0%
7	At Home, Library, Cafe & Hostel	6 16.7%	23 63.9%	7 19.4%	36 100.0%
8	At Home & Library	3 25.0%	7 58.3%	2 16.7%	12 100.0%
	Total	219 39.8%	229 41.6%	102 18.5%	550 100.0%

Chi-Square Tests

S. N.	Description	Results
1	Calculated Value of Pearson χ^2	39.165
2	Table Value	21.026
3	Degree of Freedom	14
4	Result	χ^2 is rejected on 0.05 per cent level of significant

In the above table Pearson chi-square test at degree of freedom 21 and 0.05 level of significant, table value is 21.026 that is lesser than calculated value 39.165, so H_0 is rejected. Therefore, it is concluded that there is significant difference between place of used Internet and academic status of the respondents.

7.0 Verification of the Hypotheses

7.1 H1: There is no significant difference between library visits and academic status of the respondents in Agricultural University Libraries of Punjab, Haryana and Madhya Pradesh: The table value χ^2 is lesser

(7.815) than calculated value (17.001) hence hypothesis is rejected. Hence there is a significant difference between library visits and academic status of the respondents in Agricultural University Libraries of Punjab, Haryana and Madhya Pradesh.

7.2 H2: There is no significant difference between ICT awareness and information seeking behaviour of respondents in Agricultural University Libraries: The table value χ^2 is lesser (5.991) than calculated value (.900) hence hypothesis is accepted. Hence there is no significant difference between ICT awareness and information seeking behaviour of respondents in Agricultural University Libraries.

7.3 H3: There is no significant difference between academic status and satisfaction about present library services & facilities in Agricultural University Libraries: The table value χ^2 is lesser (12.592) than calculated value (16.127) hence hypothesis is rejected. Hence there is a significant difference between academic status and satisfaction about present library services & facilities in Agricultural University Libraries.

7.4 H4: There is no significant difference between academic status and sources of information in Agriculture University Libraries: The table value χ^2 is lesser (38.885) than calculated value (77.336) hence hypothesis is rejected. Hence there is a significant difference between academic status and sources of information in Agriculture University Libraries.

7.5 H5: There is no significant difference between places of used Internet in universities: The table value χ^2 is lesser (32.671) than calculated value (51.995) hence hypothesis is rejected. Hence there is a significant difference between places of used Internet in universities.

7.6 H6: There is no significant difference between place of used Internet and academic status of the respondents: The table value χ^2 is lesser (21.026) than calculated value (39.165) hence hypothesis is rejected. Hence there is a significant difference between place of used Internet and academic status of the respondents.

8.0 Suggestions

The study's graceful conclusions and the comments from the participants lead to the following recommendations. These recommendations enhance how library patrons seek information in the ICT era and how that information affects them.

1. To stay current with emerging technologies, library professionals from Punjab, Haryana, and Madhya Pradesh Agricultural Universities should regularly travel to conferences, refresher courses, and seminars;
2. The Punjab, Haryana, and Madhya Pradesh Agricultural Universities' authorities should set up training programs for ICT application, Internet awareness, and the use of e-books, e-journals, and e-resources for their readers.
3. The Punjab, Haryana, and Madhya Pradesh Agricultural Universities should be equipped with the tools needed to provide their students with highly technical and digital library services;
4. Create campus-wide Internet facilities with leased lines for quick access to the Internet;
5. The libraries of the aforementioned universities should devise and implement new information literacy initiatives that equip students with the necessary knowledge and skills to access electronic information resources more efficiently;
6. Every university library should establish and maintain institutional repositories that are updated on a regular basis.

9.0 Conclusion

ICT has affected almost every sector of our life, bringing a change in the case of people's think, communication etc. this innovative change is also true in the case of libraries and information centers can hardly function today without computers and information technologies. In the digital era the library and information professions have been changed and adopted itself to the development of ICT. A well-equipped library with the facilities of modern information infrastructure and technologies could satisfy the maximum demand of the present technology conscious users.

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