Use of Collection and Services: A Study of Indian Agricultural Research Institute Library

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ABSTRACT

The main aim of this study is to investigate the users' opinion concerning the use of collection and services in the IARI library. Therefore, the study is focused on users' opinion not only in terms of use, purpose, and satisfaction level with the library collection and services, but also in terms of use of e-resources, and adequacy of library collection. The questionnaire was administered to students of the IARI to collect data regarding the use of collection and services and analyse the level of users' satisfaction. The Likert's scale and chi-square test were also employed. The survey revealed that there exist significant differences not only in the level of usage, purpose, satisfaction of the library collection and services, but also in terms of use of e-resources and adequacy of library collection. The researcher observed that the e-form of collection and services due to their high usage has become a significant part of the library in fulfilling the needs of the postgraduate and research students. To maximise the use of library collection and services, the library should consider all the possible aspects related to users satisfaction. This study highlights the use and non-use of library collection and services, and provides the library management an opportunity to review its collection and services as well as its policies.

Keywords: Library collection and services; e-resources, user satisfaction; Indian Agricultural Research Institute

1.   INTRODUCTION

Agriculture is now not only recognised as one of the oldest practical arts and the profession in the applied sciences but also a vital link in the production of the food, shelter, and clothing of mankind. Food is an indispensable need for the survival of populations. Therefore, the launch of First Five Year Plan in April 1951 aimed to avoid the food shortage by the significant increase in the food production. At present, agriculture is supporting about 70 per cent of the population of India[1]. The national agricultural research system (NARS) under the Indian council of agricultural research (ICAR) consists of 30,000 scientists/teachers in 47 central institutes, 5 national bureaus, 12 project directorates, 33 national research centres, 91 all India coordinated research projects, 440 Krishi Vigyan Kendras, 120 zonal agricultural research stations, 10 trainers training centres, 44 agriculture technology information centres, several regional research centres, 40 state agricultural universities, 5 deemed to be universities and 1 central agricultural university[2,3]. The growth and development of these organisations and their libraries have made important contribution in improving the crops production and economic status. Today, Agricultural University libraries have brought out substantial changes in their position as well as in the functions, collections, services, etc. which has been made possible by cutting edge technologies[4].

Now, India has a total of 46 agricultural universities, and their libraries function in different parts of the country[5,6]. Pt. Jawaharlal Nehru, the first Prime Minister of India, laid down the foundation of green revolution and the real development of agricultural universities and their libraries begun. Before and after independence, a large number of agricultural universities along with their libraries have been established. The Indian Agricultural Research Institute (IARI) along with its library was established at Pusa (Bihar), in 1905, which consisted of 5,000 donated publications. Due to the devastating earthquake, in 1934, the institute was shifted to its present location in New Delhi, where the library was inaugurated in 1936 by Lord Linlithgow, the Vice Roy and Governor General of India and named after him as Linlithgow library[7]. In 1947, it was again renamed as IARI library[8]. The library houses over 6,24,004 highly specialised research publications on agriculture and related sciences[7]. From the above mentioned available collection, various library services were generated and used in the study. Therefore, the study seeks the user's opinion concerning the use of collection and services in the IARI library. The findings of this study are expected to highlight the use and non-use of library collection and services, and provide the library management, an opportunity to review its collection and services as well as its policies which will help in maximising the use of library collection and services.

2. LITERATURE REVIEW

The era of the technological revolution, knowledge and information explosion has brought a number of challenges to the libraries, which have to build an effective hybrid collections and services for encountering the varied demands of the users. To understand the use of library collection and services, numerous studies have been conducted. Ogbomo and Adomi[9] showed that text books was the most used collection in the library, while in other studies, periodicals collection was the most widely used source by research scholars and agricultural scientists[10,11]. Singh[12] found the most used information sources as periodicals, reference books and textbooks. Ocholla[13] illustrated the use journals, textbooks, research reports, and conference material. Majid[14], et al. revealed that journal and review articles were the preferred primary information sources by research scientists. Uzezi[15] and Salaam[16] revealed that all respondents used the collections for assignments and examination purposes. Fidzani[17] found that journals, library books and textbooks were the most popular sources of information for course work and research, while the study by Naqvi[18] indicated that the library's collection such as books, reference materials, research reports, CD-ROMs, newsletters, periodicals, thesis, book reviews, and seminars/conference/workshops literature were the most used among the P.G. students and research scholars for fulfilling purposes like research work, project work, study, and personal work.

Kumbar and Lohar[19] and Shokeen and Kaushik[20] revealed that the library catalogue and browsing was the most used way for locating the documents, respectively, whereas Singh and Satija[21] in their study showed that scientists preferred to use indexing and abstracting periodicals for finding the original sources. Singh[12] indicated that the circulation, photocopy, and reference were the most helpful and very popular services, while, many of the users were not aware about microfilm/microfiche service[22]. Naqvi[18] showed that the library services like photocopying, CD-ROM database, online, catalogue, indexing and abstracting, CAS, bibliographical, reference, and lending/circulation were the most used among the P.G. students and research scholars. In other studies, reference and circulation services[23], and reprographic service[24] were found satisfactory.

The adequacy of library collections is one of the significant elements in determining the success of any library. Majid and Tan[25] indicated printed materials such as books were the most preferred information format and the use of databases and electronic journals was quite low. Naqvi[26,27] in his studies revealed that the CD-ROM databases such as AGRIS, AGRICOLA, CAB abstract, and agriculture & natural resources; and e-journals were the highly used e-resources by the majority of P.G. students and research scholars of GBPUAT. Singh and Singh[10] and Ikhizama and Oduwole[11] investigated the library collection as adequate and fair respectively, while tMajid and Kassim[28] showed that respondents perceived IIUM library collections, services and facilities as adequate to meet their information needs effectively.

Kiran[29] found that the overall satisfaction with the library services received a satisfactory rating and the library assessment helped to know the current library strengths and weaknesses[30] that can provide an opportunity to libraries in re-orienting their collections, services and activities for effectively meeting their information needs[17,31].

3. OBJECTIVES AND LIMITATIONS

The present study aimed to explore the use of collection and services of IARI library by the students. Therefore, the following objectives were set to attain the main aim of the study:

i. To find out the use of various categories of library collections and services among the students.
ii. To identify the purpose of use of various categories of library collections and services.
iii. To know the types of e-resources most used by the students.
iv. To find out the adequacy of various types of print and electronic collection in the library.
v. To assess the students' satisfaction in using the various categories of library collections and services.

Under this study, personal characteristics such as gender and age have not been considered and only the users' approach (post graduate students and research scholars) to know the use of library collection and services has been questioned.

3.1 Hypotheses

H1: There exists significant difference in usage, purpose, and satisfaction level in using various types of library collections and services.

H2: There exists significant difference in the use of e-resources.

H3: There exists significant difference in the level of adequacy of library collection.

4. RESEARCH METHODOLOGY

Due to its self-administered nature, inexpensiveness, and usefulness, the most prominent survey approach was applied in this study[32]. In the light of set objectives and literature review, a questionnaire containing several close-ended, open-ended, and multiple choice questions was designed to collect the relevant research data. Likert's five-point scale in designing the questionnaire was also used.

The questionnaires were randomly distributed to 250 post-graduate (P.G.) students and research scholars studying in IARI, India. 130 (52 %) filled in questionnaires were returned. Finally, 125 (50 %) total useable questionnaires were selected as sample size for data analysis and interpretation. The demographic data is as follows in Table 1.

The collected data from the students was organised, tabulated, analysed and interpreted using the following tools and techniques: frequency distribution, percentages, summated mean scores through weighted index and ranking techniques; MS-Excel Package; and the chi-square test.

5. RESULTS AND ANALYSIS

The collected data was analysed and interpreted to draw the results and testing of hypotheses framed for this study.

5.1 Use of Collections and Services

In this study, the whole collection and services was

Table 1. Demographic data

Variables	Numbers	Percentage
Total distributed questionnaire	250	100.00
Total returned questionnaire	130	52.00
Total useable questionnaire	125	50.00
Categories of Respondents		
P.G. Students	80	64.00
Research Scholars	45	36.00
Total	125	100

classified into the several information sources and services to have a clear picture of usage by the P.G. students and research scholars.

Table 2 indicated the usage of several information sources through mean and ranking. The following information sources such as CD-ROMs, reference materials, books/monographs, periodicals, thesis/dissertations, research reports/bulletins, seminars/conference/workshops proceedings, and newsletters were heavily used among the majority of P.G. students and research scholars. It was also revealed that other information sources such as microfiches/records/tapes, standards/patents/specifications, reprints/maps/globes, and book reviews were very least used among P.G. students and research scholars.

Similarly, it was also noted from Table 3 that most of the P.G. students and research scholars used CD-ROM database service, photocopy service, library catalogue for locating the documents, reference services for getting the original information source, lending/circulation service for borrowing books/monographs, online services, bibliographical service,

and indexing & abstracting (I&A) service, respectively. The services like Inter-library loan (ILL) service, microfilm service, document delivery service (DDS), and current awareness service (CAS) were very least used among the P.G. students and research scholars.

It was found from Tables 2 and 3, that there existed significant differences in the usage of various types of library collection and services among the students. Hence, the hypothesis 'There exists significant difference in usage, purpose, and satisfaction level in using various types of library collections and services' was partially validated by the above findings.

5.2 Purpose of use of Collections and Services

Under study, out of five purposes ; research work, project work, study, personal work, and no response, the P.G. students and research scholars were asked to state one or more than one in order to ascertain the purpose of using different types of library collection and services.

Table 2 revealed that most of the P.G. students and research scholars made use of CD-ROMs, reference materials, research reports/bulletins, periodicals, thesis/dissertations, books/monographs, seminars/conference/workshops proceedings, and newsletters to fulfil their different purposes such as research work, project work, study, and personal work. In addition, the sources like microfiches/ records/tapes, standards/patents/specifications, book reviews, and reprints/maps/globes were least used information sources among P.G. students compared to research scholars for their various purposes.

The mean score and ranking of Table 3 illustrated that CD-ROM database, bibliographical, I&A, reference, online,

Table 2. Usage, purpose, and satisfaction level in using various collections

Collections	Usage		Purpose		Satisfaction	
	P.G. students	Research scholar	P.G. students	Research scholar	P.G. students	Research scholars
	Mean (Rank)	Mean (Rank)	Mean (Rank)	Mean (Rank)	Mean (Rank)	Mean (Rank)
Books/monographs	3.13 (1-2)	2.62 (4)	2.79 (2)	2.89 (6)	3.13 (4)	2.38 (4)
Reference materials	2.94 (3)	2.84 (3)	2.61 (3)	3.36 (3-4)	3.19 (3)	2.42 (2-3)
Periodicals	2.53 (6)	3.18 (2)	2.45 (7)	3.49 (1-2)	3.05 (6)	2.42 (2-3)
Research reports/bulletins	2.69 (5)	2.31 (5)	2.58 (4)	3.36 (3-4)	3.2 (5)	1.93 (6)
Theses/dissertations	2.99 (4)	2.16 (6)	2.56 (5)	3.22 (5)	3.44 (2)	2.04 (5)
Seminar/conference/ workshop proceedings	2.14 (8)	2.04 (7)	2.46 (6)	2.24 (7-8)	2.83 (7)	1.62 (8)
Book reviews	1.99 (9)	1.51 (9)	2.03 (9)	1.56 (12)	2.47 (9)	1.51 (9)
Reprints/maps/globes	1.30 (10)	0.91(10)	1.81 (10)	1.84 (11)	1.81 (11)	1.22 (10)
News letters	2.26 (7)	1.73 (8)	2.28 (8)	2.04 (10)	2.56 (8)	1.69 (7)
Standards/patents/ specifications	1.23 (11)	0.69 (11)	1.21 (11)	2.24 (7-8)	2.15 (10)	1.02 (11)
Microfiches/records/ tapes	0.86 (12)	0.53 (12)	1.01 (12)	2.13 (9)	1.74 (12)	0.89 (12)
CD-ROMs	3.13 (1-2)	3.20 (1)	2.96 (1)	3.49 (1-2)	3.5 (1)	3.04 (1)
Chi-square calculated value	0.52354414		1.030000529		0.401348888	
DF	11		11		11	
Significance level	0.05		0.05		0.05	
Chi-square table value	19.675		19.675		19.675	
Decision/ Null hypothesis	Significant/Accepted		Significant/Accepted		Significant/Accepted	

Table 3. Usage, purpose and satisfaction level in using various services

Services	Usage*		Purpose		Satisfaction	
	P.G. students	Research scholars	P.G. students	Research scholars	P.G. students	Research scholars
	F (%)	F (%)	Mean (Rank)	Mean (Rank)	Mean (Rank)	Mean (Rank)
Lending/circulation service	71 (88.75)	34 (75.56)	2.06 (11)	2.13 (8)	2.78 (5)	2.49 (6-7)
ILL service	0 (0.00)	1 (2.22)	2.25 (9)	1.16 (12)	1.23 (11-12)	1.33 (11)
Reference service	71 (88.75)	38 (84.44)	2.80 (5)	3.22 (2)	3.11 (2)	2.89 (4)
Bibliographical service	46 (57.50)	33 (73.33)	3.14 (3)	3.02 (3)	2.98 (3)	2.69 (5)
CAS	35 (43.75)	24 (53.33)	2.08 (10)	1.89 (9)	2.04 (9)	2.36 (8)
DDS	39 (48.75)	21 (46.67)	2.60 (7)	1.51 (10)	2.05 (8)	1.73 (10)
I&A service	55 (68.75)	24 (53.33)	3.20 (2)	2.89 (5)	2.64 (6)	2.27 (9)
Photocopy service	72 (90)	44 (97.78)	2.68 (6)	2.87 (6)	3.73 (1)	3.07 (2)
Microfilm service	0 (0.00)	4 (8.89)	1.34 (12)	1.47 (11)	1.23 (11-12)	1.04 (12)
Catalogue service	75 (93.75)	36 (80)	2.31 (8)	2.76 (7)	2.53 (7)	2.49 (6-7)
CD-ROM database service	80 (100)	43 (95.56)	3.48 (1)	3.29 (1)	2.88 (4)	3.71 (1)
Online service	58 (72.5)	41 (91.11)	2.84 (4)	2.98 (4)	1.76 (10)	2.96 (3)
Chi-square calculated value	-	-	0.813545284		0.605562846	
Degree of freedom	-	-	11		11	
Significance level	-	-	0.05		0.05	
Chi-square table value	-	-	19.675		19.675	
Decision/ Null hypothesis	Significant/Accepted		Significant/Accepted		Significant/Accepted	

(*Under the usage heading figures within parenthesis are percentage , F = Frequency)

photocopy, catalogue, lending/circulation, and DDS were heavily used library services among majority of P.G. students and research scholars for their different purposes. The other library services such as ILL, Microfilm, and CAS were very least used services among the P.G. students and research scholars for their various purposes.

The results from Table 2 and 3 indicated that the chi-square table value was greater than the chi-square calculated value and there exists significant difference in the purpose of use of library collection and services among students. Thus, the hypothesis was confirmed by the above findings.

5.3 Satisfaction Level in using of Collections and Services

To know the overall effectiveness of the library collection and services, P.G. students and research scholars were asked to provide their satisfaction assessment with regards to available collection and services in meeting their information needs.

According to the mean score and ranking from Table 2, most of the P.G. students and research scholars were highly satisfied with the usage of CD-ROMs, reference materials, books/monographs, thesis/dissertations, periodicals, research reports/bulletins, seminars/conference/workshops proceedings, and newsletters. It was also observed that the P.G. students as compared to research scholars were least satisfied with the usage of sources like microfiches/ records/tapes, reprints/maps/ globes, standards/patents/specifications, and book reviews respectively.

In this study, Table 3 illustrated that the P.G. students and research scholars were highly satisfied with the services like photocopy, CD-ROM database, reference, bibliographical,

lending/circulation, catalogue, I&A, online, and CAS. In addition, the P.G. students and research scholars were least satisfied with the services such as microfilm, ILL, and DDS, respectively.

In comparison, the results from Table 2 and 3 revealed that the chi-square calculated value was far less than the chi-square table value and the significant difference in the satisfaction level in using the collections and services among students existed. Accordingly, the hypothesis was confirmed by the above findings.

5.4 Use of E-resources Collections

This section deals with e-resources which are mushrooming in Agriculture libraries and very popular among the users in comparison to print sources. To know the usage of e-resources collection, the whole collection has been categorised as mentioned in Table 4.

The mean use score and ranking indicated that CD-ROM databases, e-journals, and online databases were the highly used databases among most of the P.G. students and research scholars.

The library from publishing companies around the world subscribed to a number of international prominent electronic and online databases in Agriculture and other related subjects for searching the latest world of research literature.

According to mean use frequency score and ranking of CD-ROM databases from Table 5, AGRIS, CAB abstract, AGRICOLA, Agriculture & natural resources and Biotechnology were the highly used CD-ROM databases among the P.G. students and research scholars.

Table 4. Use of e-resources

E-Resources	P.G. students	Research scholars
	Mean (Rank)	Mean (Rank)
E-Books	1.86 (4)	0.73 (4)
E-Journals	2.81 (2)	3.08 (2)
CD-ROM Databases	3.35 (1)	3.5 (1)
Online Databases	2.51 (3)	2.43 (3)
E-Dictionaries	1.35 (5)	0.53 (5)
E-Encyclopaedias	1.09 (6)	0.45 (6)
Chi-square calculated value	0.935872093	
Degree of freedom	5	
Significance level	0.05	
Chi-square table value	11.071	
Decision/ Null hypothesis	Significant/Accepted	

Table 5. Use of databases

Databases	P.G. students	Research scholars
	Mean (Rank)	Mean (Rank)
AGRIS	3.30 (1)	3.30 (2)
AGRICOLA	3.21 (3)	2.93 (3)
Agriculture & natural resources	2.05 (4)	1.86 (4)
Biotechnology	2.04 (5)	1.53 (5)
CAB abstract	3.23 (2)	3.77 (1)
FSTA	1.54 (7)	0.67 (8)
Water resource abstract	1.49 (8)	0.93 (6)
Zoological records	1.48 (9)	0.88 (7)
BIOSIS	1.64 (6)	0.33 (9)
Chi-square calculated value	1.249155596	
Degree of freedom	8	
Significance level	0.05	
Chi-square table value	15.507	
Decision/ Null hypothesis	Significant/Accepted	

In the analysis, it was noticed from Tables 4 and 5 that the chi-square calculated value is lesser than the chi-square table value. Therefore, the hypothesis 'There exists significant difference in the use of e-resources' was confirmed by the results of the study.

5.5 Adequateness of Collection

It was observed from Table 6 that P.G. students and research scholars of IARI were satisfied with the adequateness of the print collection rather than electronic.

Accordingly, the result demonstrated that there existed significant differences in terms of adequacy of library collection as the chi-square calculated value was less than the chi-square table value. It was also noticed that the print collection was playing a vital role in satisfying the needs of the student community. Hence, the hypothesis 'There exists significant difference in the level of adequacy of library collection' was verified by the above outcomes.

Finally, it was indicated that all three hypotheses were validated by the results of Table 2, 3, 4, 5, and 6.

Table 6. Adequateness of collection

Collection	P.G. students	Research scholars
	Mean (Rank)	Mean (Rank)
Print	1.23 (2)	1.22 (1)
Electronic	1.36 (1)	1.11 (2)
Chi-square calculated value	0.012456611	
Degree of freedom	1	
Significance level	0.05	
Chi-square table value	3.841	
Decision/ Null hypothesis	Significant/Accepted	

6. CONCLUSIONS

The major results of the research showed that there exist significant differences not only in the level of usage, purpose, satisfaction of the library collection and services, but also in terms of use of e-resources and adequacy of library collection. This significant difference will not only assist in reviewing and strengthening the collections and services but also in meeting the need of P.G. students and research scholars.

Apart from this, the study also revealed that the information sources such as CD-ROMs, reference materials, books/monographs, periodicals, thesis/dissertations, research reports/bulletins, seminars/conference/workshops proceedings, and newsletters were heavily used among the majority of P.G. students and research scholars for their different purposes (research work, project work, study, and personal work). Moreover, the library services such as CD-ROM database, photocopy, library catalogue, reference, lending/circulation, online, bibliographical, and I&A were the most used services among the P.G. students and research scholars. It was observed that CD-ROM databases, e-journals and online databases were the highly used e-resources among the P.G. students and research scholars. In addition, CAB abstract, AGRIS, AGRICOLA, agriculture & natural resources, and biotechnology were the most used specific electronic and online databases among the P.G. students and research scholars. The e-form of library collection and services due to their high usage has become a significant part of the agricultural university library in satisfying the demands of the student community. To take advantage of recent developments in science & technology and information revolution, the library is playing a vital role in transmitting the scientific and technological knowledge to the users by building a good collection of knowledge not only in print but also in electronic format in agriculture and related fields.

The study has highlighted some negative impacts or drawbacks such as inadequacies, and use and non-use of collection and services, to ascertain areas which require improvements. Therefore, a number of recommendations suggested for making the collection and services effective as the library collection and services must be user centered and improved: the library collection for optimal utilisation should be kept up-to-date by adding the latest/revised editions/volumes of the most frequently used information sources and by weeding out obsolete information sources. The number of copies of most demanded/utilised books must be acquired and

one copy be placed in the reserve collection so that more users can use them at the same time; research reports and conference/seminars/workshops proceedings from reputed national and international agricultural organisations should be obtained to keep the user community aware of the latest research trends; the collections such as microfiches/records/tapes, standards/patents/specifications, and reprints/maps/globes and services such as microfilm, ILL, and DDS should be strengthened for effective utilisation; more number of e-resources should be subscribed and appropriate number of networked computers for effective searching and browsing be installed; networking among all the agricultural libraries at national and international level for effective utilisation of collection and services needs to be developed; to enhance the use of print and e-resources, the library awareness campaigns concerning the latest promotion methods such as circulation of new arrivals list though e-mail, e-mail alert/pop up system, text messages, workshops, prizes, etc. must be accelerated; and librarians and library staff need to improve their knowledge and skills by attending more training programs on effective searching and retrieval in order to train its users more effectively, and for optimum utilisation of available information resources, the library must provide orientation assistance to the users and compulsory user education or information literacy programs must be implemented. In order to maximize the use of library collection and services, the library should consider all the possible aspects related to users satisfaction. Further, this study provides the library higher management an opportunity to review its collection and services as well as its policies so that utilisation of used and no-used collection and services could be enhanced.

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