

Use of Information Sources by Research Scholars and Faculty Members of Biological Science: A Case Study of Bharathidasan University, Tiruchirappalli, Tamil Nadu

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(Received 3 December 2018; Revised 25 December 2018; Accepted 12 January 2019; Available online 5 February 2019)

Abstract - This study identified that the user studies help build need-based and balanced collections in University Environment. A questionnaire was used to collect data about use of information sources by research scholars and faculty members of biological Science in Bharathidasan University in Tiruchirappalli. This study identified relative importance of information sources among the research scholars and faculty members of biological Science in a University environment is emphasized. The study reveals that Reprints/Prints, Abstracting and Indexing Journal, primary periodicals, Newspaper, Dictionaries, Subject Bibliographies and Monographs / Text books were the sources of information which were most frequently used. A majority of the biologists use Internet and sixty percent collected information through on-line search. Most found the collection inadequate to meet their information needs.

Keywords: Information Sources, University, Dictionary, News Paper, Research Report

I. INTRODUCTION

Libraries are the lighthouses of information dissemination, an important component of any educational institution, and hub of learning activities where students, researchers, and teachers can explore the vast amount of information resources (Adithya Kumari, & Talawar, 2009). The present age is regarded as the 'age of information' and information has become the commodity in today's context of information explosion where we are living in the information society. Information has become an essential requirement for every one's life. Each one of us requires information for our day-to-day activities (Holland, 1978). In this context, Library and Information Centre's (LICs) are playing an important role in extending the required latest information resources and services quickly to their users (Ali, 2005). In the present study, an attempt has been made not only to identify the relative importance of different resources of information used by the scientists, but also to test whether the personal attributes of scientists have any bearing on the use of information resources or not.

II. STATEMENT OF THE PROBLEM

To examine the use of information resources of research scholars and staff members of the Biological Science of Bharathidasan University in order to analysis the use pattern

of information sources. In this background the present study examines the use of information sources (between the research scholars and the faculty of the biological science in Bharathidasan University) versus the personal attributes of scientists.

III. OBJECTIVES OF THE STUDY

The objectives of the present study are:

1. To determine the relative importance of different sources of information.
2. To know whether the personal attributes of biologists such as designation, sex, age, qualification, experience, nature of work and nature of research in a university environment have any bearing on the use of information sources or not.
3. To assess the value of bibliographic information sources by the biologists.

IV. SAMPLE SELECTION

In order to study the source of information used by biologists in Bharathidasan University: A case study has been chosen since only very few empirical studies relating to the use of information sources of biological scientists in general is available. As there are many departments in this university, the researcher selected the faculty members and research scholars working in the Departments of Botany, Zoology and Micro-Biology. A total of 140 biologists were working in these departments and the questionnaire designed for the purpose was distributed to all of them. Out of which, 105 responded to the request with a response rate of 75%. The distribution of biologists according to their status both in the population and in the sample is shown in Table I.

TABLE I DISTRIBUTION OF BIOLOGIST ACCORDING TO THEIR STATUS BOTH IN THE POPULATION AND SAMPLE

Status	Biologists	
	In the Population	In the Sample
Faculty Members	35	26
Research Scholars	105	79
Total	140	105

It is evident from Table I that out of total population, 25 percent are faculty members and remaining 75 percent are research scholars. It is also obvious from it that 24.76 percent of the biologists in the sample are faculty members and the remaining 75.24 percent are research scholars.

V. DATA ANALYSIS

Biological literature appears in a wide variety of sources. Sources of biological literature can be identified by the type of sources and subject matter of sources. Sources of biological literature for all kinds of specialized information are available in the library for biological research. Depending upon the nature of the job, the stage of the project, the urgency of the information or the availability of the information sources, the information seeking also varies from individual to individual (Pushpalatha & Mallaiiah, 2009). The present research examines the use pattern of information sources by biologists.

A. Characteristics of Study Population

The study population consisted of more number of research scholars (75.24%) than Assistant Professor (9.52%), Associate Professor (8.57%), Professor (4.76%) and Professors (UGC) (1.91%) (Table II). More than two – fourth (63.81%) consisted of male population (Table 3). More than three – fourth (80%) of the biologists belonged to the age group of below 35 years and followed by those 35 – 45 years (16.19%) and more than 45 years (3.81%) (Table IV), More than fifty percent of the biologists (66%) were Ph.D holders (Table V).

Majority of the biologists were from the field of Micro-Biology (45.71%) and the rest from Botany (27.62%) and Animal Science (26.67%) (Table VI). Teaching and research experience of biologists showed that 42.86% belonged to the initial phase, while 46.67%, 10.47% respectively belonged to the middle and later phase (Table VII). More than one – fourth of the biologists were engaged in teaching and research, while the remaining 71.43% of the biologists were engaged only in research. No one biologists only in teaching (Table 8). 27.62% of the biologists studied were conducting basic research, the applied research being carried out by 40%, while the remaining 32.38% of the biologists were involved in both types of research (Table IX).

TABLE II DESIGNATION WISE DISTRIBUTION OF BIOLOGISTS (N=105)

Designation	Number	%
Professors(UGC-BSR)	2	1.91
Professor	5	4.76
Associate Professor	9	8.57
Assistant Professor	10	9.52
Research scholars	79	75.24
Total	105	100.00

TABLE III SEXWISE DISTRIBUTION OF BIOLOGISTS (N=105)

Sex	Number	%
Male	67	63.81
Female	38	36.19
Total	105	100.00

TABLE IV AGE WISE DISTRIBUTION OF BIOLOGISTS (N=105)

Age (in years)	Number	%
< 35	84	80.00
35-45	17	16.19
>45	4	3.81
Total	105	100.00

TABLE V QUALIFICATION WISE DISTRIBUTION OF BIOLOGISTS (N=105)

Qualification	Number	%
Ph.D.,	66	62.86
Non - Ph.D.,	39	37.14
Total	105	100.00

TABLE VI SUBJECT WISE DISTRIBUTION OF BIOLOGISTS (N=105)

Subject	Number	%
Botany	29	27.62
Animal Science	28	26.67
Micro-Biology	48	45.71
Total	105	100.00

TABLE VII TEACHING AND RESEARCH EXPERIENCE OF BIOLOGISTS (N=105)

Experience	Number	%
Initial phase	45	42.86
Middle phase	49	46.67
Later phase	11	10.47
Total	105	100.00

TABLE VIII NATURE OF WORK PERFORMED BY THE BIOLOGISTS (N=105)

Nature of work	Number	%
Teaching	---	---
Research	75	71.43
Both	30	28.57
Total	105	100.00

TABLE IX RESEARCH WORK UNDERTAKEN BY BIOLOGISTS (N=105)

Nature of Research work	Number	%
Basic Research	29	27.62
Applied research	42	40.00
Both	34	32.38
Total	105	100.00

B. Use of Information Sources by the Biologists

The use of different sources of information by the biologists in a university environment is shown in Table X. It is evident from Table X that Reprints/Prints (68.57%), Abstracting and Indexing Journal (60%), primary periodicals (40%), Newspaper (37.14%), Dictionaries (34.29%), Subject Bibliographies and Monographs / Text books (29.52% each) were the sources of information which were most frequently used by the largest majority of the biologists. Research report (45.71%), subject Bibliographies and Institution sources (37.14% each), primary Journal, Theses and Dissertations and personal contacts (36.19% each), Guide to subject Literature

(34.29%), Monographs / Text books (33.33%), Hand books and Manual (31.43%), Dictionaries (30.48%) and Standards (29.52%) were frequently used sources of information, while Conference / Seminar papers (36.19%), Institution sources (32.38%), Government publication and Encyclopaedia (31.43% each) and Bibliography of Bibliographies (29.52%) were the sources of information which were occasionally used by the biologists. Private files (32.38%), and library personnel (29.52%) were rarely used, while patents (45.71%), Geographical sources (34.29%), Trade Catalogue (33.33%), Standards (31.43%) and Audio-Visual sources (30.48%) were never used by majority of the biologists in a university environment.

TABLE X USE OF INFORMATION SOURCES BY THE BIOLOGISTS (N=105)

Information Sources	Most Frequently Used 4	Frequently Used 3	Occasionally Used 2	Rarely Used 1	Never Used 0	Mean use Score (Rank)
Primary Journal	42 (40)	38 (36.19)	14 (13.33)	4 (3.81)	7 (6.67)	2.99 (3)
Research Report	24 (22.86)	48 (45.71)	20 (19.05)	4 (3.81)	9 (8.57)	2.70(9)
Conference / Seminar Papers	20 (19.05)	28 (26.67)	38 (36.19)	13 (12.38)	6 (5.71)	2.41 (11)
Patents	5 (4.76)	10 (9.52)	19 (18.09)	23 (21.90)	48 (45.71)	1.06 (25)
Standards	6 (5.71)	31 (29.52)	20 (19.05)	15 (14.29)	33 (31.43)	1.63 (20)
Trade Catalogue	8 (7.62)	14 (13.33)	29 (27.62)	19 (18.09)	35 (33.33)	1.44 (22)
Theses and Dissertations	29 (27.62)	38 (36.19)	22 (20.95)	11 (10.48)	5 (4.76)	2.71 (8)
Personal Contacts	16 (15.24)	38 (36.19)	24 (22.86)	18 (17.14)	9 (8.57)	2.32 (12)
Private Files	4 (3.81)	18 (17.14)	25 (23.81)	34 (32.38)	24 (22.86)	1.47 (21)
News Paper	39 (37.14)	29 (27.62)	13 (12.38)	17 (16.19)	7 (6.67)	2.72 (7)
Government Publication	8 (7.62)	25 (23.81)	33 (31.43)	27 (25.71)	12 (11.43)	1.90 (19)
Reprints / Preprints	72 (68.57)	27 (25.71)	3 (2.86)	1 (0.95)	2 (1.90)	3.58 (1)
Abstracting and Indexing Journal	63 (60)	27 (25.71)	10 (9.52)	3 (2.86)	2 (1.90)	3.39 (2)
Subject Bibliographies	31 (29.52)	39 (37.14)	21 (20)	11 (10.48)	3 (2.86)	2.80 (5)
Monographs / Text books	31 (29.52)	35 (33.33)	26 (24.76)	11 (10.48)	2 (1.90)	2.78 (6)
Dictionaries	36 (34.29)	32 (30.48)	23 (21.90)	13 (12.38)	1 (0.95)	2.85 (4)
Encyclopaedia	13 (12.38)	20 (19.05)	33 (31.43)	28 (26.67)	11 (10.48)	1.96 (18)
Yearbooks & Directories	17 (16.19)	20 (19.05)	27 (25.71)	30 (28.57)	11 (10.48)	2.02 (15)
Geographical Sources	5 (4.76)	11 (10.48)	24 (22.86)	29 (27.62)	36 (34.29)	1.24 (24)
Hand books and Manual	16 (15.24)	33 (31.43)	30 (28.57)	20 (19.05)	6 (5.71)	2.31 (13)
Library Catalogue's	12 (11.43)	24 (22.86)	30 (28.57)	29 (27.62)	10 (9.52)	1.99 (17)
Bibliography of Bibliographies	12 (11.43)	25 (23.81)	31 (29.52)	25 (23.81)	12 (11.43)	2.00 (16)
Guide to Subject Literature	23 (21.90)	36 (34.29)	25 (23.81)	13 (12.38)	8 (7.62)	2.50 (10)
Institution Sources	10 (9.52)	39 (37.14)	34 (32.38)	15 (14.29)	7 (6.67)	2.29 (14)
Audio – Visual Sources	5 (4.76)	15 (14.29)	23 (21.90)	30 (28.57)	32 (30.48)	1.34 (23)
Library personnel	16 (15.24)	25 (23.81)	18 (17.14)	31 (29.52)	15 (14.29)	1.96 (18)

The mean use score and the ranking of different source of information used by the biologists indicated that reprints/preprints were the most useful sources of information and these were followed by abstracting and

indexing journals, primary journal, dictionaries, subject bibliographies, monographs / textbooks, newspaper, theses and dissertations, research report, guide to subject literature, conference / seminar papers, personal contacts handbooks

and manual, institution sources, yearbooks & directories, bibliography of bibliographies, library catalogue's, encyclopaedia and library personnel, government publication, standards, private files, trade catalogue, audio-visual sources, geographical sources and patents.

C. Value of Bibliographic Information

The bibliographic information sources have been classified into (i) formal, (ii) informal and (iii) electronic media. The formal sources include journals (x_1), books (x_2), encyclopaedia (x_3), abstracts (x_4), citation index (x_5) and current contents (x_6).

The informal sources consists of experts in the field (x_7) and results of their own experiment (x_8) The value of these

bibliographic information sources depends on the individual's psychology, awareness about current information etc. Electronic media comprises Internet, online search, E-Journal and Databases.

1. Value of Formal Information Sources

The dependence of formal information sources are described in Table XI. Among the formal sources of information, the biologists depend heavily on journal (94.2%) followed by encyclopedia (39%), Books (30%), citation index (25.7%) and current contents (22.8%).

Comparison of the use value of information sources between staff and research scholars indicates that journals are equally viewed by staff as well as research scholars.

TABLE XI VALUE OF FORMAL INFORMATION SOURCES

Sources of Information	Staff					Research Scholars			All Respondents (A+B)
	Professors (UGC)	Professor	Associate Professor	Assistant Professor	Total (A)	Ph.D	M.Phil	Total (B)	
Journals	2	5	9	9	25	39	35	74	99
Books	1	2	5	3	11	-	21	21	32
Encyclopaedia	1	3	7	5	16	10	15	25	41
Abstracts	2	3	6	4	15	5	3	8	23
Citation Index	2	4	7	8	21	5	1	6	27
Current Contents	2	3	1	6	12	4	8	12	24

On the other hand encyclopaedia is more important for research scholar than teaching staff. The remaining formal information sources are valued heavily by research scholar.

2. Value of Informal Information Sources

The value of informal information sources to the respondents is presented in Table XII. A majority of 74.2

percent respondents rely on the informal communication with the experts in their own field followed by their own research findings (53.8% only staff) where as research scholar (52%) rely only discussion with their subject experts.

TABLE XII VALUE OF INFORMAL INFORMATION SOURCES

Sources of Information	Staff					Research Scholars			All Respondents (A+B)	%
	Professors (UGC)	Professor	Associate Professor	Assistant Professor	Total(A)	Ph.D	M.Phil	Total (B)		
Discussion with experts in the field	2	4	8	9	23	30	25	55	78	74.2%
Results of their own experiment	2	3	3	6	14	-	-	-	14	13.3%

3. Value of Electronic Media

As the "Information age" continues to evolve more and more people are coming in contact (directly or indirectly) with computer based information systems. A common concern, even though these systems differ greatly, in the scope and area of application, is with the user – system

interface take a work-oriented perspective of libraries (Gowda & Shivalingaiah, 2009; Ranganathan, 2011; Archana & Padmakumar, 2011). Their study examined the way in which information is sought and used by people at work (research, teaching, etc.) They argue that digital libraries designed based on the assumptions and findings of information seeking and use behavior in traditional library

environments are restrictive and new approaches to the study of information seeking is needed. In this context, the present study examines the uses of electronic media which

is a source of information to the Biological scientists in Bharathidasan University.

TABLE XIII VALUE OF ELECTRONIC-MEDIA AS A SOURCES OF INFORMATION

Use value of Electronic Media	Staff					Research Scholars			All Respondents (A+B)	%
	Professors (UGC)	Professor	Associate Professor	Assistant Professor	Total(A)	Ph.D	M.Phil	Total (B)		
Internet	2	4	5	7	18	35	24	59	77	73.3%
Online search	2	4	3	5	14	29	20	49	63	60%
E-Journal	2	2	-	4	8	20	15	35	43	40.9%
Databases	2	2	4	6	14	25	10	35	49	46.6%

Table XIII above expounds the components of electronic media such as Internet, Online search, E-Journal and Databases used by biologists. Since Bharathidasan University library is presently transformed into digital library with all types of facilities, the information handlers are presently using the media for gathering information. It is inferred that 73.3 percent of biological scientists uses Internet and 60 percent collects information through on-line search. The use of E-Journal for gathering information is relatively lesser (40%). Further, the revealing fact is, the electronic media is largely used by research scholars as compared to staff members.

V. MAJOR FINDINGS

The following findings were drawn from this study.

1. More than fifty percent of the biologists (66%) were Ph.D., holders.
2. Majority of the biologists were from the field of biochemistry (45.71%) and the rest from botany (22.62%) and Zoology (26.67%).
3. More than one – fourth of the biologists were engaged in teaching and research, while the remaining 71.43 percent of the biologists were engaged only in research.
4. Among the formal sources of information the biologists depend heavily on journal (94.2%) followed by encyclopaedia (39%), books (30.47%) citation index (28.3%), current contents (25.2%) and abstracts (17%).
5. A majority of 74.2 percent respondents rely on the informal communication with the experts in their own field flowed by their research findings.
6. It is inferred that 73 percent of biologists use Internet and 60 percent collects information through on-line search.

V. CONCLUSION

The information resources have played a vital role in all fields of human life. These have rapidly changed the way of seeking and disseminating information. The emergence of Electronic Information and Communication environment has provide the academic community of the universities with wide opportunities to satisfy their information needs. We understand that the university libraries are switching over to electronic resources at an accelerated pace. Printed resources are supplemented by electronic databases, e-journals and a variety of media.

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