

INFORMATION SEEKING PATTERNS OF BIOLOGISTS IN MADURAI KAMARAJ UNIVERSITY, MADURAI: A CASE STUDY

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ABSTRACT

This study analyses the information seeking patterns of research scholars and teaching staff of the Biological Science at Madurai Kamaraj University, Madurai. Since biological Science research has become so dependent upon an effective information support system that it gets crippled in the absence of a good library. Therefore, biological professionals play a very significant role in enriching the biological scientists and scholars by providing them with the latest information concerning their areas of interest. The study identified identical or very similar categories of information seeking behavior to those of academic researchers. The results were then compared to certain minor variations concerned with an association between experience and the source of bibliographic information used, the extent of motives and purpose of seeking information, the influence of formal and informal factors motivations and the research stage at which a strategy may be employed were identified.

KEYWORDS: *Information Seeking Behavior, Biological Science, Motivation, Formal Factor, Bibliographical Source*

INTRODUCTION

Information plays a very important role in every aspect of human life.¹ It is especially true in the context of the fast pace of today's life, where information becomes obsolete too soon. The value of information as a crucial factor in the social and economic development and progress of a nation is increasingly recognized. To a remarkable extent, information is a source of power². It consists of statements made by individuals or groups of individual about ideas which they assimilated into their knowledge store. Information is an element of knowledge that is publicly available and which can be shared and pass through the world. Information seeking behavior includes actions or strategies undertaken to locate information. It is the recognition of some need perceived by the user who as a result makes demand upon a library and information system or some other individual in order to meet his information requirement. The field is composed of studies that are concerned with who need what kind of information and for what reasons, how information is found, evaluated and used and how these needs can be identified and satisfied³. The information seeking behavior is thus concerned with establishing a relationship with the people, information, and system of order so as to obtain the best desired.

Statement of the Problem

The information seeking behavior of academicians of various discipline and non-academicians has been viewed by many authors from the perspective of (i) sociological approach [Gunzberg (1981)⁴, Markus (1983)⁵ and Kim (1990)⁶] (ii) Software engineering approach [Lee and Juliff (1994)⁷]. These studies identified that the information seeking behavior of any library/information center comprises user satisfaction which is a product of information satisfaction, system satisfaction and supports satisfaction. To analyses the information seeking behavior of research scholars and teaching staff of the Biological Science. Since biological Science research has become so dependent upon an effective information support system that it gets crippled in the absence of a good library. Therefore, biological professionals play a very significant role in enriching the biological scientists and scholars by providing them with the latest information concerning their areas of interest. In this background, the present study examines the information seeking patterns of faculty members and research scholars of Biological Science in Madurai Kamaraj University, Madurai: a case study.

OBJECTIVES OF THE STUDY

- To find out the extent of time spent by the biologists in searching for information.
- To find out the purpose for which they seek and collect bibliographical information.
- To identify the factors motivating the information seeking a pattern of biologists.
- To examine the factors motivating for formal and informal factors made by biologists.

Hypothesis

- There is a positive correlation between the experience of marine biologists and time spent on information gathering
- There is no association between the experience of biologists and the sources of bibliographic information use.
- There is no association between the experience of biologists and the motives and purpose of seeking information.
- The influence of formal factors of motivation is higher than informal factors on biologists.

METHODOLOGY

The survey was chosen as the method most likely to describe accurately the information seeking a pattern of individuals involved (such as staff members and research scholars) in the field of Biology.

Method of Data Collection

Questionnaire methods were used to elicit information from the biologists. The questionnaires were distributed to the users personally and were collected from them by giving sufficient time to fill up the questionnaire. If any of the respondents were willing to fill up the questionnaire immediately, the investigator waited until it was filled up. The doubts raised by the respondents were clarified by the investigator. Some of them were interviewed in depth and cross check facts as provided in the questionnaire. They were assured that the data provided by them would be kept strictly

confidential and used for research purpose only. The investigator did not stress the users to give their name in the questionnaire if they were unwilling to do so. Every effort was made by the investigator to get reliable and accurate data respondents.

The sources of data were also collected from the library related documents and annual report, records maintained by them and by interviewing the library staff. The investigator visited the Department of Biological Science and Central Library in Madurai Kamaraj University and observed the working conditions of the library at the time of data collection.

Sample Selection

The study population consisted of faculty members and research scholars of the Biological Science in Madurai Kamaraj University. The data was collected from the respondents through the questionnaire. A total of twenty faculty members were working and fifty research scholars studying in this department and the questionnaire designed for the purpose was distributed to all of them. Out of which fifty-eight responded to our request with a response rate of 82.8

Application of Statistical Tools

The following statistical tools are being applied to test the hypotheses.

To examine the first hypothesis, simple log-linear regression is applied. The technique is presented below

$$Y = aX^b$$

Where

Y = Experience of Biologists

X = Time spent on information gathering

If taking log on both sides, it can be rewritten as

$$\text{Log } Y = a + b \log X$$

$$b = \frac{\sum XY - NXY}{\sum X^2 - NX^2}$$

$$a = Y - bx$$

To examine the second and third, hypothesis, chi-square technique is applied. The technique is explained below

$$\chi^2 = \frac{(O - E)^2}{N}$$

O – Observed value

E – Expected value

N – Number of observation

The multiple log-linear regression technique is used to verify the fourthth hypotheses and the technique is expanded below

$$Y = aX_1^{B_1} X_2^{B_2} \dots X_n^{B_n} \dots \dots \dots (1)$$

Taking log on both sides, the equation can be rewritten as

$$\text{Log } Y = a + b_1 \log x_1 + b_2 \log x_2 + \dots + b_n \log x_n$$

Analysis and Interpretation

Information on biological literature for all kinds of specialized information is available in the library. 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 behavior also varies from individual to individual. The present research examines the information seeking a pattern of teaching members and research scholars of biological Science.

Time Spent on Information Gathering

It is probably not true that biologists spent most of their time on laboratory activities. They also spend time on information gathering. Both types of communication, scientific and non-scientific are obtained by the scientists. To know whether there exists any variation in the time spent per week on Information gathering of the library among the five levels of the biologists; respondents were asked to indicate their pattern of use of the library. Responses of the biologists in this respect are presented in Table 1. The survey indicates that an average biologist spent 9.87 hours per week for gathering information

Table 1: Time Spent on Information Gathering Activities

Time Spent	All Respondents		Prof.	Read.	Lect.	Ph. D Sch.	M. Phil Sch.
	Total Res.	Total Hours					
More than 20 hours Per week	5	100	-	-	1	2	2
16 to 20 Hours	6	108	-	-	1	4	1
11 to 15 Hours	7	91	-	-	-	5	2
7 to 10 Hours	20	180	2	1	4	10	3
4 to 6 Hours	14	70	1	1	2	7	3
Less than 4 Hours	6	24	-	1	2	2	1
Total	58	573	3	3	10	30	12

Table 2: Correlation between the Experience of Biologists and Time Spent on Information Gathering

Variable	Value of Co Efficient	Standard Error	t-Value
Constant	12.896	1.2692	8.91
Years of Experience	-0.8743*	0.0534	15.752
R ²	0.7183		

* Significant at 1 Percent Level

It is inferred from Table 2 that the negative sign of the value of the coefficient of time spent on information gathering indicates the existence of the negative correlation between the year of experience of biologists and the time spent on information gathering. Further, the value is statistically significant since the calculated value of “t” is greater than the table value at one percent level.

Besides, the value of the coefficient is less than (0.87) implies that a one percent increase in the years of experience is accompanying the time spent on information gathering negatively by 0.87 percent. The value of the coefficient of determination (R^2) has been 0.71, which means the years of experience determines the time spent on information gathering by 71 percent.

Sources of Bibliographical Information Used

Among the different types of bibliographic information, 72 per cent of biologists used library catalogues followed by electronic media such as online search and CD-ROM (51.7%), direct browsing of library shelves (48%) and citation in current reading materials (44.8%) (Vide table - 2). The library catalogue and direct browsing of library shelves are largely used by Research scholars (50%). On the contrary, staff members are largely using electronic media (56%) and colleagues (50%). Further, citation in current reading materials is equally used by teaching members and research scholars.

Table 3: Association between an Experience of Biologists and the Source of Bibliographic Information Used

Bibliographic Information	Biologist		Total No. of Respondent	Chi-Square Value	Degrees of Freedom	Level of Significant
	Staff Members	Research Scholars				
Library Catalogue	10 (62.5)	32 (76)	42 (72.4)	23.1	5	0.05
Colleagues	8 (50)	15 (35.7)	23 (39.6)			
Direct Browsing	7 (43.75)	21 (50)	28 (48.2)			
Experts in the field	8 (50)	6 (14.28)	14 (24.13)			
Citation in current reading material	10 (62.5)	17 (40.47)	27 (46.55)			
Electronic media	15 (93.75)	15 (35.7)	30 (51.7)			

The calculated value of chi-square is greater than the table value at one percent level. Hence, the hypothesis is not validated. In other words, there is an association between the experience of biologists and sources of bibliographic Information used.

Motives and Purpose of Seeking Information

The motivation of the Biologists for seeking information has been ascertained in the present study by requesting them to check on a five-point scale certain identified list of motives as noted.

It is evident from Table-3 that 34.5 per cent of the biologists are fairly strongly motivated by preparation for class teaching 27.5 per cent are strongly motivated, 25.9 per cent are average motivated and the remaining 12.1 per cent are weakly motivated by it; 36.2 per cent of the biologists are strongly motivated to general awareness for new knowledge, 32.8 per cent are fairly strongly motivated, 22.4 per cent are average motivated and the remaining 8.6 per cent are weakly motivated by it; 39.6 per cent of the biologists are strongly motivated to participation in seminars / conference, 27.6 per cent are fairly strongly motivated, 20.7 per cent are average motivated and the remaining 8.6 per cent are weakly motivated by it; 31 per cent of the biologists are strongly motivated by the increase of promotional opportunities 29.3 per cent are average motivated 20.7 per cent are strongly motivated and the remaining 19 per cent are weakly motivated by it; 43.1 per cent of the biologists are strongly motivated to writing and publishing, 29.3 per cent are fairly strongly motivated, 17.3 per cent are average motivated and the remaining 10.3 per cent are weakly motivated by it and also 46.5 per cent of the biologists are strongly motivated to guiding research scholars, 20.7 per cent are average motivated,

19 per cent are fairly strongly motivated and the remaining 13.8 per cent weakest motivated by it.

The different level of seeking information such as Preparation for class teaching, General awareness for new knowledge, Increasing to Opportunities, Write and Publish Paper, Guide to Research Scholars and Student Project, the calculative chi-square value is greater than the table value at five percent levels.

Table 4: Distribution of Users According to the Motives and Purpose of Seeking Information

Use	Biologist		Total	Calculated Value	df	Table Value ($\alpha=0.05$)	P-Value	Significant
	Staff	Research Scholar						
Preparation for Class Teaching								
Strongly	81.25	7.2	27.5	32.08	3	7.815	0.0000	S
Fairly strongly	6.25	45.2	34.5					
Average	6.25	33.3	25.9					
Weakest	6.25	14.3	12.1					
General Awareness for New Knowledge								
Strongly	56.2	28.6	36.2	16.75	3	7.815	0.0008	S
Fairly strongly	25.0	35.7	32.8					
Average	12.5	26.2	22.4					
Weakest	6.3	9.5	8.6					
Participation in Seminar / Conferences								
Strongly	50.0	35.7	39.6	1.265	3	7.815	0.7374	NS
Fairly strongly	18.75	31.0	27.6					
Average	18.75	21.4	20.7					
Weakest	12.5	11.9	12.1					
Increase of Promotional Opportunities								
Strongly	43.8	26.2	31.0	11.87	3	7.815	0.0078	S
Fairly strongly	25.0	19.1	20.7					
Average	18.7	33.3	29.3					
Weakest	12.5	21.4	19.0					
Writing and Publishing Papers								
Strongly	68.8	33.3	43.1	35.10	3	7.815	0.0000	S
Fairly strongly	25.0	31.0	29.3					
Average	6.2	21.4	17.3					
Weakest	0	14.3	10.3					
Guiding Research Scholars / Project								
Strongly	81.3	33.3	46.5	11.68	3	7.815	0.0085	S
Fairly strongly	12.5	21.4	19.0					
Average	-	28.6	20.7					
Weakest	6.2	16.7	13.8					
Total	100 n = 16	100 n = 42	100 n = 58					

Influence of Formal Factors of Motivation

Table 5: Influence of Formal Factors of Motivation

Variable	Value of Co-Efficient	Standard Error	t-Value
Constant	11.304*	0.5418	19.1768
Access to data (X_1)	0.7381	5.1312	0.1253
Research at global level (X_2)	1.1112*	0.2164	5.7465

$R^2 = 0.4306$ * Significant at 1 Percent level

Table 5 expound that of the two formal factors [access to data (X_1) and research at global level (X_2)] only X_2 , research at the global level alone motivates the information seeking behavior of biologists since the calculated value of 't' is greater than the table value at one per cent level. In addition, these two factors jointly determine the seeking behavior of biologists by 43 per cent ($R^2 = 0.43$).

Influence of Informal Factors of Motivation

Table 6 expounds that of the two informal factors of motivation [motivated by a guide and other research scholars (X_3) and self-motivation (X_4)]. Self-motivation (X_4) influences significantly the motivation of seeking behavior of biologists. The calculated value of 't' for X_4 is greater than the table value at one per cent level. Further, the value of R^2 (coefficient of determination) has been 0.25 implies that the informal factors determine the motivation of information seeking behavior of biologists by 25 per cent.

Table 6: Influence of Informal Factors of Motivation

Variable	Value of Co-Efficient	Standard Error	t-Value
Constant	1.7960*	0.0787	20.4595
Motivated by guide and other research scholars (X_3)	0.3538	0.1456	2.3298
Self-motivation (X_4)	1.1248	0.2145	5.1452
R^2	0.2547		

* Significant at 1 Percent Level

Thus, it is found out that the value of R^2 for the influence of the formal factors of motivation has been 0.4304 explains that the formal factors motivate the information seeking behavior of biologists by 43 per cent. On the contrary, the value of R^2 for the influence of the informal factors of motivation has been 0.2547 explains that the informal factors motivate the information seeking behavior of biologist by 25 per cent. Hence, it can be concluded that the formal factors motivate more the seeking behavior of biologists than the informal factors.

FINDINGS

Major Findings

The major findings drawn from the analysis of information seeking behavior Faculty Members and Research Scholars of biological science are explained below.

- The findings of the use of library it is found out that the biologists have spent on an average 9.87 hours per week for gathering work-related information. Further, it is documented that the research scholars are spending more time on information gathering as compared to staff members.
- The library use pattern in terms of sources of bibliographic information used to examine and the results show that majority of the biologists (72%) reflex library catalogue first and the electronic media (51.7%). The comparative analysis of staff and research scholars explain that library catalogue and direct browsing of library shelves are largely used by research scholars (50%) on the center, staff members are using electronic media.

- The findings reveal that the biologists are seeking information to write and published paper (89.6%), for participation in seminars/conference (82.75%). Hence it can be concluded that the biologists are mainly seeking information for writing and publishing papers, conferences and seminars and preparing for class teaching compared to other purposes. As the faculty members have to perform the teaching and research roles effectively in the academic environment.

CONCLUSIONS

The following conclusions were drawn from this study

- General information and Bibliographic information should keep abreast with current developments which are main types of information required by the biologists.
- There is a negative correlation between the research experience of biologists and time spent on Information gathering.
- There is an association between the experience of biologists and the sources of bibliographic information used.
- There is an association between the biologists and level of motivation in seeking information.
- The formal factors motivate more seeking behavior of biologist than the informal factors.

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