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Information Access Pattern of Users of Selected Engineering College Libraries in Chennai, Tamil Nadu – A Study

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Abstract – **In the material world of science, information plays the crucial role for the existence of common human being without which man may not exist as it is exactly and increasingly being recognized as a vital source. Information is an indispensable raw material for right decision making from individual to individual and from individual to general. It is, in fact, a vital ingredient for the social development of any nation, especially for the developing countries like India. It is a well accepted generalization that a county which is rich in information is rich in socio-economic spheres. The backwardness of any country in respect of socio-economic spheres is mainly due to lack of information transferred adequately to international co-operation, co-ordination and understanding, especially in the field of science and technology.**

Keywords: **Information Access Pattern, Open Access Resources, Electronic Sources for Information**

I. Introduction

In the modern material world of mechanical reality, progress and growth of scientific knowledge depend upon other factors related to the systematic accumulation and evaluation of all information generated by the numerous researchers is various scientific disciplines. The systematized and cumulative structure of scientific knowledge is shaped by the quick temperament of the researcher with which he shapes his intellect. The transfer of scientific and technical data between countries or within a given country is essential for the economic health and social prosperity of a nation.

II. Need for The Study

It is to mention that the information seeking behaviors of the workplace community varies from that of the general readers of the library system. The work place community needed much pinpointed information in relation with their working environment and day-to-day activities. It is note that there is no significant studies on assessing information access pattern of Engineering College library users is found in the library science literature, particularly in the Chennai city. Hence it is to remember that in depth study on the information seeking behaviors of the work place community will reveal the problems encounter by them to access relevant information and tactics that they are using to get information. So this study is proposed to have depth analysis on the information seeking behaviors of a particular work place community like faculty and students of Engineering Colleges in Chennai City. It is expected that the outcome of the study will have the strong bearing on the minds of future researchers on Library users' information seeking behaviors as well as to find new ways and mean to solve the information of the work place community.

III. Methodology

The present study is of descriptive in nature using normative survey. This is an assessment study that describes the extent of status of the parameters prevailed in the study environment. The researcher has chosen data collection methods through structured questionnaire survey and observation. A pilot study was made and the findings were used to modify and refine the data collection tool. The

data collected through the questionnaire was tabulated and statistical tests viz., Percentage Method, Chi-square and t-test were applied to test the hypotheses.

A. Area of the Study/Survey

The investigator wants to take research on a vast spectrum of human experience and knowledge. A total of 10 Engineering Colleges are surveyed resulting in a large sample numbering 548. The sample comprises of Professors, Associate Professors, Assistant Professors and Students.

Areas of The Study/Survey Covers Engineering Colleges

S.No.	Name of the Engineering Colleges
1	Sriram Engineering College, Chennai.
2	Jeppiaar Engineering College, Chennai.
3	Jaya Engineering College, Chennai.
4	Sairam Engineering College, Chennai.
5	K.C.G Engineering College, Chennai.
6	Peri Institute of Technology, Chennai.
7	Meenakshi College of Engineering, Chennai.
8	R.M.K Engineering College, Chennai.
9	P.M.R Institute of Technology, Chennai.
10	Sri Venkateswara College of Engineering, Chennai

IV. Limitations of The Study

The researcher has collected data only from the students and faculty who are available in the libraries of the selected institutions during the survey period at the time of i.e., July 2011 to June 2012 by repeated personal visits during the period. The researcher has chosen only ten engineering colleges in the city and not deemed universities.

V. Analysis and Interpretation

The trend of use of electronic information sources among the surveyed respondents found significant difference. The majority of the respondents (84.08 %) have used Wikipedia, which is followed by Online Databases (71.51 %) and Blogs (68.44 %). Websites and Subject Gateways are used by 54.75 and 54.19 % of respondents.

Table I Use of Electronic Sources for Information

Use of electronic source of information	Students N=358	Assistant Professor N=76	Associate Professor N=68	Professor N=46	Total N=548
Wikipedia	301 (84.08)	68 (89.47)	57 (83.82)	22 (47.83)	448 (81.75)
Blogs	245 (68.44)	59 (77.63)	53 (77.94)	12 (26.09)	369 (67.34)
Social networks	154 (43.02)	38 (50.00)	36 (52.94)	14 (30.43)	242 (44.16)
Online Databases	256 (71.51)	71 (93.42)	57 (83.82)	24 (52.17)	408 (74.45)
CD-ROM Databases	152 (42.46)	73 (96.05)	64 (94.12)	35 (76.09)	324 (59.12)
Websites	196 (54.75)	65 (85.53)	38 (55.88)	21 (45.65)	320 (58.39)
Portals	172 (48.04)	37 (48.68)	26 (38.24)	15 (32.61)	250 (45.62)
Subject Gateways	194 (54.19)	34 (44.74)	14 (20.59)	12 (26.09)	254 (46.35)

Table II Type of Information often Required

Type of Information often Required	Students N=358	Assistant Professor N=76	Associate Professor N=68	Professor N=46	Total N=548
Procedural Information	170 (47.49)	51 (67.11)	51 (75.00)	29 (63.04)	301 (54.93)
Product Information	195 (54.47)	68 (89.47)	62 (91.18)	35 (76.09)	360 (65.69)
Factual and Statistical Information	279 (77.93)	63 (82.89)	60 (88.24)	31 (67.39)	433 (79.01)
Information for writing research articles	298 (83.24)	71 (93.42)	60 (88.24)	41 (89.13)	470 (85.77)
Information for preparing project proposals	176 (49.16)	69 (90.79)	61 (89.71)	42 (91.30)	348 (63.50)
For administrative progress	109 (30.45)	41 (53.95)	38 (55.88)	40 (86.96)	228 (41.61)
For guiding the Students	82 (22.91)	70 (92.11)	58 (85.29)	41 (89.13)	251 (45.80)
For special lectures and Academic activities	99 (27.65)	49 (64.47)	56 (82.35)	44 (95.65)	248 (45.26)

It is found that information is required for Guiding the Students (92.11 %), highest percentage of Associate Professor (91.18 %), preferred Product Information, while highest percentage of Professors preferred (91.30 %) Information for preparing project proposals and Assistant Professor (93.42 percent) and Professors (89.13 %) preferred information for writing research articles.

It is found that a majority of the respondents pretend e-books (80.66 %), full text articles (77.74 %) and article abstracts (75 %) as the first preference, while the next larger group of respondents ranked models/designs (59.12 %) and standards as the first choice of e-resources format accessed. It is also interest to note that a few of the respondents ranked patents (11.68 %) and formulas (3.83 %) as their first choice of information format.

Table III Ranking on Forms of E-Resources Accessed

S.No.	Information Searched	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Total
1	E-books	442	80	26	00	00	548
2	Full text articles	426	98	20	4	00	548
3	Articles abstracts	411	87	32	10	8	548
4	Standards	121	129	140	115	43	548
5	Patents	64	51	114	98	221	548
6	Formulas	21	57	135	101	234	548
7	Models/designs	324	76	115	30	3	548

Few statements were given to the spondents to get an idea on which they are best suitable for their information seeking. 76.09% of the respondents viewed that specific journal website and multi journal websites providing full text articles are well suited for their search. Next to this, 67.33 % of the respondents viewed that the general purpose search engines like Google and Yahoo are opt for their information.

Among the various databases, available in University environment to the users, a maximum of 75.18 % of the respondents using Proquest. Next to this, 72.45 % of the respondents using JSTOR. The response for Sage online is 62.96% and it is 60.04% for Science Direct.

Table IV Searching For Full Text Scientific Journal Articles

S.No.	Particular	No. of Respondents	Percentage
1	A general purpose search engine (e.g. Google, Yahoo)	369	67.33
2	A specific journals website	417	76.09
3	A multi-journals search website with links to full text (e.g. IEEE, ASCE, DEL, Science Direct and Springer Verlag)	417	76.09
4	Online citation index (e.g. Web of science, Scifinder, Scopus, BIOSIS) where only abstracts are available	361	65.88
5	Local libraries reference room or stacks	115	20.99

Table V Preferences and Use of Scholarly Resources Databases

S. No.	Database	No. of Respondents	Percentage
1	ABI inform Complete	60	10.95
2	ACM DI	37	6.75
3	ASTM Standards	51	9.31
4	ASCE online	42	7.66
5	IOP on line	60	10.95
6	Ebsco	315	57.48
7	Emerald	320	58.39
8	Elsevier Science Direct	329	60.04
9	Eng Net Base	21	3.83
10	Sage online	345	62.96
11	Taylor & Francis	322	58.76
12	IEE/IEE electronic library	175	31.93
13	Springer link	312	56.93
14	Springer e-books	75	13.69
15	OUP Journals Online	165	30.11
16	CUP Journals Online	340	62.04
17	Royal Society of Chemistry	75	13.69
18	JSTOR	397	72.45
19	MatsciNet	215	39.23
20	Science Online	320	58.39
21	Proquest	412	75.18
22	Project muse	364	10.95

Analysis of the bibliographic database used by the researchers to locate primary research journals revealed that, majority of the respondents (47.45%), preferred web of science as the bibliographic databases, which is followed by Dissertation Abstracts (27.37%), Scopus (21.90%), Scifinder (21.35%) and Engineering Village (20.99%).

Among the open access databases PubMed used by a large group of respondents as regularly (35.58 %) and occasionally (24.82 %). This is followed by the Google Scholar as 32.48 % of the respondents used regularly and 29.20% of the respondents as occasionally used. While Open J-Gate database used by 25.91% regularly and 35.77 % of respondents occasionally.

Table VI Bibliographic Databases used By The Researchers

S. No.	Bibliographic Database	No. of Respondents	Percentage
1	Scifinder	117	21.35
2	Scopus	120	21.90
3	Engineering Village	115	20.99
4	Web of Science	260	47.45
5	Dissertation Abstracts	150	27.37
6	LISA	15	2.74
7	Biological Abstracts	75	13.69

Table VII Open Access Resources Access Through College Library Website

Open Access Resources		Students N=358	Assistant Professor N=76	Associate Professor N=68	Professor N=46	Total N=548	%
PubMed	Regularly	121	22	33	19	195	35.58
	Occasionally	81	25	16	14	136	24.82
	Not at all	156	29	19	13	217	39.60
Open J-Gate	Regularly	85	36	12	09	142	25.91
	Occasionally	126	21	35	14	196	35.77
	Not at all	147	19	21	23	210	38.32
Public Library of Science	Regularly	49	00	00	00	49	8.94
	Occasionally	100	38	26	39	203	37.04
	Not at all	209	38	42	07	296	54.01
Google Scholar	Regularly	79	36	32	31	178	32.48
	Occasionally	112	14	22	12	160	29.20
	Not at all	167	26	14	03	210	38.32
OAISter	Regularly	49	01	00	00	50	9.12
	Occasionally	112	56	20	12	200	36.50
	Not at all	197	19	48	34	298	54.38

The above table explains various search strategies followed by the users for their information needs. 59.31% of the respondents seek information through searching scholarly information by journals name. Here, the search beings with specified information. Next to this, 58.39% of the respondents search information through keywords. 50.36% of the respondents search information by titles of the papers.

Table VIII Search Options of The Respondents

S.No.	Search Options	No. of Respondents	Percentage
1	By Titles	276	50.36
2	By Subjects	75	13.69
3	By Authors	115	20.99
4	By Keywords	320	58.39
5	By Publishers	61	11.13
6	By Date of Issue	251	45.80
7	By Journal Name	325	59.31
8	By Year/Period	69	12.59

The purposes to use internet such as Communication (52.17 %) and entertainment (72.35 %) preferred by the Professors and the Students respectively than other categories of the respondents. Assistant Professors (94.74%) are the largest group within the category to make use the internet for the purpose of Research.

Table IX Purpose of Using Internet

Purpose of Using Internet	Students N=358	Assistant Professor N=76	Associate Professor N=68	Professor N=46	Total N=548
Education	214 (59.78)	65 (85.53)	54 (79.41)	40 (86.96)	373 (68.07)
Research	102 (28.49)	72 (94.74)	61 (89.71)	43 (93.48)	278 (50.73)
Communication	185 (51.68)	35 (46.05)	29 (42.65)	24 (52.17)	273 (49.82)
Entertainment	259 (72.35)	19 (25.00)	16 (23.53)	11 (23.91)	305 (55.66)
Business	56 (15.64)	22 (28.95)	13 (19.12)	09 (19.57)	100 (18.25)
Household Activities	39 (10.89)	18 (23.68)	14 (20.59)	11 (23.91)	82 (14.96)

Lack of power supply, Limitation of online full-text journal articles and Limitation of Internet access speed are the three major difficulties as encountered by the users community in accessing for information. It is inferred from the analysis that the major difficulties in accessing electronic journals are due to irregular power supply (25.14) and low number fo electornic journals subscribed (21.14).

Table X Difficulties in Accessing Information

S.No.	Details	Number	Percentage	Deviation
1	Lack of knowledge in computer handling	273	49.82	-28.86
2	Lack of knowledge in browsing e-journals	294	53.65	-7.86
3	Limitation of internet access speed	305	55.66	3.14
4	Limitation of online full-text journal articles	323	58.94	21.14
5	Unfriendly library staff	292	53.28	-9.86
6	Lack of power supply	327	59.67	25.14
7	Untraceable of document	299	54.56	-2.86
Mean = 301.86 S.D. = 17.27				

VI. Conclusions

Information access pattern of the respondents studied in encouraging as the students and faculty of the surveyed Chennai based selected Engineering Colleges are adopting the range of search methods and approaches to information. Accessing information through library staff and colleagues are the most preferred mechanism used by the respondents to get the information. The respondents also access information by trial and error, training at work place and by the participating workshops, Training and seminars. Respondents prefer search approached to the documents by the title, keywords and by the journal name. Search through the author, publisher were preferred by less number of respondents. The mean were used as source to consume the scholarly information are both print and e-resources. Among the e-resources, e-books, full text articles, abstracts, models and designs were mostly used forum of documents. Study could find the limitations pursued by the users in the Chennai based selected Engineering College towards information access. Such as lack of knowledge in computer handling browsing the e-journals, limitations of internet access speed the attitude of library staff and power fluctuations.

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