

# Information Search and Retrieval in Digital Environment: A Case Study of Self Financing Engineering Institutions in Thiruvallur District, Tamil Nadu

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**Abstract** – To-day the digital environment becomes a dominant especially among the younger generations. Therefore it become manditory to provide digital information both sources and services to the society. In this study, attempt has been made to identify the digital information sources and their utility among the engineering institutions in Thiruvallur district, Tamil nadu (India). There are 44 engineering institutons in this district of which 24 institutions established before 2005 were taken up for the study. Out of 2400 questionnaire were distributed 2214 were responded. The response rate is 92.56%. In this study, visit to institutional library, opinion on digital environment, satisfaction of digital services, opinion on digital information sources and use of these information sources were analysed and presented. There exist considerable awareness on availability of digital information sources and has been effectively utilisted by the users of the engineering institutions of Thiruvallur district.

**Keywords:** Digital Library, Engineering Colleges

## I. INTRODUCTION

The Digital Environment is the conglomeration of all of those events, facts, realities into a tangible experience of a changed way of being. A culture shift has happened where a technological leap forward has matched with or been contemporaneous with sympathetic philosophical and pedagogical advances. Digital Environment happens not only because the technology can make it happen but also because the collaborative working strategies have also become main stream and because post modernity has fractured public confidence of alternative forms of knowledge. Of course, the synergistic relationship between

all aspects of this culture shift is complex with different aspects feeding other developments promoting rapid, greenhouse, and development.

## II. RELATED LITERATURE

A substantial body of literature exists on information seeking and scientific communication. There exist several reviews and monographs on this line of study (Bates, 2005; Case, 2002; Dervin & Nilan, 1986; Fisher, Erdelez & McKechnie, 2005; Spink & Cole, 2005).

It has been well documented that information seeking and use varies by discipline, profession, task, situation, and context (e.g., Bates, 1994; Bates *et al.*, 1995; Borgman, 2006; Bystrom, 1999; Case, 2002; Cool, 2001; Dervin, 1997; Kling & McKim, 2000; Hansen & Järvelin, 2005; Rice & Tarin, 1993; Savolainen, 2006a, 2006b; Solomon, 1997, 2002; Taliya & Maula, 2003; Tenopir *et al.*, 2005; Vakkari, 2006; Vakkari & Taliya, 2005; Zhang, 2001). Using various research methods (Wang, 1999), the majority of the studies have focused on specific user groups or individual IICTs, such as e-journals, digital library, and online library catalog, etc.

Taking various approaches, such as cognitive, sense-making, behavioral, etc., different models have been proposed at both the macro and micro levels (e.g., Belkin, 1980; Ellis, Cox, & Hall, 1993; Dervin, 2005; Ingwersen, 2001; Ingwersen & Järvelin, 2005; Kuhlthau, 1993; Marchionini, 1995; Saracevic, 1996; Wilson, 1981, 1999).

This ongoing study investigates the information-seeking and communication behaviors (IS) in the Digital Environment by students studying in engineering institutions. A semi-structured questionnaire method and a hybrid quantitative and qualitative approach to observe researchers' uses of digital environment in seeking their required information.

The purpose of the study is to understand how digital environment are used to support their academic requirements and what are the similarities and differences across disciplines and cultures.

### III. OBJECTIVES

Some of the objectives are:

1. To identify awareness on digital environment among the students of the Engineering Institutions;
2. To identify the awareness about the availability of digital services by the users in engineering institutions;
3. To identify the awareness among the users about the availability of digital sources in their engineering institutions;
4. To identify the awareness on various ICT tools by the users;
5. To identify the barriers in providing the digital services and acquiring digital sources by the engineering institutions.

### IV. HYPOTHESES

Based on the stated objectives following hypotheses were framed:

1. Their exist awareness on digital environment among the students of the engineering institutions.
2. The users are well aware about the availability of various digital services in their institutions.
3. Their exist awareness on various digital sources in their institutions among the users.
4. The users are famlier in the use of ICT tools.
5. Their exist certain barriers in providing digital services and in acquiring of digital sources in engineering institutions.

### V. METHODOLOGY

There exist 46 Self financing engineering institutions in Thiruvallur district in Tamil Nadu, India. These engineering institutions are established over the years from 1991. Out of 46 Self financing engineering institutions only 24 engineering institutions that are established prior to 2005 were taken up for the study. A well structured questionnaires were distributed among 24 Self financing engineering institutions. Each institution was provided with 100 questionnaires. Thus 2400 questionnaires were distributed. Out of 2400 questionnaire distributed only 2214 responses were received. The response rate is 92.25%. The questionnaire thus received were analysed using Statistical Package for Social Scientists (SPSS).

#### A. Limitations

Some of the limitations are:

- a. There exist 46 self financing engineering institutions in Thiruvallur district. Out of which 24 self financing institutions that are established on or before 2005 are taken up for the study.
- b. The private universities are not taken up for the study.
3. Each institutions only 100 questionnaire alone distributed.

### VI. DATA ANALYSIS

TABLE I DEMOGRAPHIC DETAILS OF THE RESPONDENTS

S.No.	Description	Responses	%
1	Gender		
	Male	1501	67.8%
	Female	713	32.2%
2	Age		
	18-20	2148	97.0%
	21-23	44	2.0%
	24-26	17	0.8%
3	Above 27	5	0.2%
	Branch		
	Circuit Branch	1584	71.5%
4	Non Circuit Branch	630	28.5%
	Nature of Management		
	Self financing - Minority	1296	58.54%
	Self financing - Non Minority	918	41.46%

It can be seen from the table I that 67.8% were male and 32.2% are female. Similarly 97% of them are of age group between 18 and 20. Only 3% of them are belong to the age group of above 21 years. 71.5% of them belong to circuit branch and 28.5% belong to non circuit branch. 58.54% belongs to Minority Self financing institutions and 41.46 % belongs to Non-Minority institutions.

The respondents' nature of visit to institutional library has been ascertained since the services can be adjudged only by the person who frequently visits the library. The responses were shown based on gender, category, and nature of establishment in Table II.

TABLE II VISIT TO INSTITUTIONAL LIBRARY

S.No.	Description	category		Nature of Establishment		Gender		Total
		Circuit Branch	Non Circuit Branch	Minority	Non Minority	Male	Female	
1	Every day	870	491	74	1287	939	422	1361
		39.3%	22.2%	3.3%	58.1%	42.4%	19.1%	61.5%
2	Once in a week	192	9	65	136	145	56	201
		8.7%	.4%	2.9%	6.1%	6.5%	2.5%	9.1%
3	More than once in week	455	127	135	447	371	211	582
		20.6%	5.7%	6.1%	20.2%	16.8%	9.5%	26.3%
4	Once in fortnight	57	1	21	37	38	20	58
		2.6%	.0%	.9%	1.7%	1.7%	.9%	2.6%
5	Once in month	10	2	1	11	8	4	12
		.5%	.1%	.0%	.5%	.4%	.2%	.5%
Total		1584	630	296	1918	1501	713	2214
		71.5%	28.5%	13.4%	86.6%	67.8%	32.2%	100.0%

61.5% of the respondents are visiting the library every day. Similarly 9.1% visits once in a week and 26.3% visits more than once in a week. In general merely 96.9% of respondents were visiting the library frequently. Therefore the results received were major extend acceptable.

The opinion on digital environment has been ascertained based on four variables with a scale of agree and disagree and the same is shown in table III.

TABLE III OPINION ON DIGITAL ENVIRONMEN

S.No.	Description	Total	Nature of estd.		Category		Gender	
			Minority	Non Minority	Circuit	Non Circuit	Male	Female
1	Without Digital environment society can no longer function	1835 (82.9%)	238 (10.7%)	1597 (71.2%)	1305 (58.9%)	530 (24.0%)	1257 (56.8%)	578 (26.1%)
2	Often it is easier to do things without using digital environment	686 (31.0%)	101 (4.6%)	585 (26.4%)	457 (20.6%)	229 (10.4%)	469 (21.2%)	217 (9.8%)
3	I do not trust Digital environment because they will fail when you need them the most	942 (42.5%)	150 (6.6%)	792 (35.8%)	635 (28.7%)	307 (13.8%)	638 (28.8%)	304 (13.7%)
4	I get nervous using Digital environment because I might break something	1298 (58.6%)	143 (6.9%)	1155 (34.5%)	1033 (46.7%)	265 (12.0%)	890 (40.2%)	408 (18.4%)

82.9% of respondents were indicated that “Without Digital environment society can no longer functions”. Nearly 58.6% indicated that they get nervous using digital environment because they might break something, and 42.5% of respondents indicated that they do not trust digital environment because they will fail when one need them the

most. Only 31.0% of respondents indicated that “often it is easier to do things without using digital environment”.

The opinion on digital services provided by the library has been ascertained and the same is shown in table IV.

Nearly 75.5% of the respondents are satisfied on digital services provided by their library.

TABLE IV SATISFACTION OF DIGITAL SERVICES IN THE LIBRARY

S.No.	Description	Frequency	Percent
1	Yes	1671	75.5
2	No	543	24.5
	Total	2214	100

TABLE V OPINION ON INFORMATION SOURCES

S.No.	Sources	Dissatisfied		Neither Satisfied nor Dissatisfied		Satisfied		Highly Satisfied		Mean	Std	Rank
1	Printed Books	12	0.5%	17	0.8%	95	4.3%	2090	94.4%	4.93	0.34	1
2	E-books	28	1.3%	78	3.5%	273	12.3%	1835	82.9%	4.77	0.57	2
3	E-journals	67	3.0%	70	3.2%	317	14.3%	1760	79.5%	4.70	0.67	3
4	E - magazine and newspapers	54	2.4%	522	23.6%	1379	62.3%	259	11.7%	3.83	0.65	7
5	NPTEL	73	3.3%	479	21.6%	1234	55.7%	428	19.3%	3.91	0.73	6
6	E-theses/ dissertation	59	2.7%	755	34.1%	1237	55.9%	163	7.4%	3.68	0.65	8
7	Audio/Visual products(CDs)	79	3.6%	127	5.7%	663	29.9%	1345	60.7%	4.48	0.76	4
8	E-databases	40	1.8%	399	18.0%	1035	46.7%	740	33.4%	4.12	0.76	5

The various seven types of digital information sources that are available in the library under study are considered. However printed books also included to identify the opinion of the respondents. The opinions were obtained on a five point scale such as “highly dissatisfied”, “dissatisfied”, “neither satisfied nor dissatisfied”, “satisfied” and “highly satisfied”. Further mean and standard deviation were also calculated and the same is provided in the table V. Ranks were assigned based on Mean and standard deviation.

94.4% of the respondents are still highly satisfied on printed books with a mean of 4.93. The other three preferences were e-books, e-journals, Audio/visual products (CDs). The least preferences were given for e-theses/ dissertation and e-magazines and newspapers.

However the mean value ranges between 3.68 and 4.93 which indicate that it occupies between satisfied and highly satisfied. Similarly the standard deviation also

ranges between 0.34 and 0.76 which indicates synchronized opinion on information sources.

The use of available information sources in the institutional library were also ascertained on a four point scale such as “not at all”, “rarely”, “occasional” and “frequently”. The mean and standard deviation were calculated based on the opinion. The ranks were ascertained based on mean and standard deviation. The opinion, mean, standard deviation and rank were provided in table VI.

The mean value of various information use ranges between 2.78 and 3.99. The first three preferences were printed books, e-books, e-magazines/newspapers. However least preferences were given for audio/visual products (CD), E-theses/desertation and e-database. The deviation of opinion ranges between 0.09 and 0.71 which indicates there exist synthonised opinion on variables.

TABLE VI USE OF INFORMATION SOURCES

S.No.	Description	Not at all		Rarely		Occasional		Frequently		Mean	Std	Rank
1	Printed Books	0	0.0%	0	0.0%	19	0.9%	2195	99.1%	3.99	0.09	1
2	E-books	0	0.0%	4	0.2%	140	6.3%	2070	93.5%	3.93	0.26	2
3	E- journals	29	1.3%	35	1.6%	198	8.9%	1952	88.2%	3.84	0.49	4
4	E-magazine/ news papers	3	0.1%	56	2.5%	109	4.9%	2046	92.4%	3.90	0.39	3
5	NPTEL	12	0.5%	55	2.5%	244	11.0%	1903	86.0%	3.82	0.48	5
6	E-theses/ desertation	20	0.9%	315	14.2%	1055	47.7%	824	37.2%	3.21	0.71	7
7	audio/visual products(CD)	65	2.9%	356	16.1%	1793	81.0%	0	0.0%	2.78	0.48	8
8	E-database	14	0.6%	17	0.8%	805	36.4%	1378	62.2%	3.60	0.54	6

TABLE VII COMPARISON OF AVAILABILITY AND USEAGE PREFERENCE

S.No.	Description	Availability		Useage	
		Std	Rank	Std	Rank
1	Printed Books	0.34	1	0.09	1
2	E-books	0.57	2	0.26	2
3	E- journals	0.67	3	0.49	4
4	E-magazine/ news papers	0.65	7	0.39	3
5	NPTEL	0.73	6	0.48	5
6	E-theses/desertation	0.65	8	0.71	7
7	audio/visual products(CD)	0.76	4	0.48	8
8	E-database	0.76	5	0.54	6

The deviation, rank of comparison of availability and useage preferences were shown in table VII.

The rank wise preferences for both printed books and e-books are identical. The availability of e-journals are third highest preference where is the utility of e-magazine/newspapers has third preference.

**VII. CONCLUSION**

This study shows that the users well aware about the impact of digital environment. The society cannot sustain with out the use of digital sources. Full utility of digital resources can be witnessed within a short duration among the users of engineering institutions. There exists a fear among the users in handling the digital resources. Still least percentage of users prefers the tradational means in handling the information sources. This may be due to lack of exposure or fear over the technology.

**REFERENCES**

- [1] Bates, M. (1994). The design of databases and other information resources for humanities scholars: The Getty online searching project report no. 4. *Online & CDROM Review 18* (December 1994): 331-40.
- [2] Dervin, B. (1997). Given a context by any other name: Methodological tools for taming the unruly beast. In P. Vakkari, R. Savolainen, & B. Dervin (Eds.), *Information Seeking in Context 13-38*. London: Taylor Graham.
- [3] Fisher, K., Erdelez, S., & McKechnie, L. (2005). (Eds.), *Theories of Information Behavior. Medford, NJ: Information Today.*
- [4] Rice, R., & Tarin, P. (1993). Staying informed: Scientific communication and the use of information sources within disciplines. In S. Bonzi (ed.), *ASIS Proceedings of the 56th Annual Meeting: 160-164.*
- [5] Vakkari, P., & Talja, S. (2005). The influence of the scatter of literature on the use of electronic resources across disciplines: A case study of FinELib. In *Proceedings of the 9th European Conference on Digital Libraries*. Berlin & Heidelberg: Springer, , 207-217.
- [6] Wilson, T. (1981). On user studies and information needs. *Journal of Documentation 37*,no. 1: 3-15.