

# An Analytical Study of Digital Library Infrastructures in Self-Financing Engineering College Libraries in Tamil Nadu

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## Abstract

*Information resources are being made available in a variety of multimedia digital formats. Attempts are being made worldwide to build digital library to access the collection more efficiently. The present study demonstrates and elaborates the digital libraries software and its types used in self-financing engineering college (SFEC) libraries in Tamil Nadu. A well structured questionnaire was distributed among library professionals in engineering colleges in Tamil Nadu to evaluate digital Library infrastructures.*

**Keywords:** Digital Library, Infrastructures

## 1. INTRODUCTION

Libraries are undergoing many changes due to ICT and Digital revolution. Libraries have to provide information to users' desktop instantly irrespective of place, time and format. The massive development of ICT has changed the role of Library and Information Centres. Information resources are being made available in various formats such as PDF, WORD, TXT, HTML, image, audio and video. In this changing world, Librarians and Libraries should have to play a major role in managing these digital resources.

## 2. DIGITAL LIBRARY

A digital library is not merely a collection of electronic information. It is an organized and digitized system of data that can serve as a rich resource for its user community. As a concept Digital Library has different connotations for different professional groups. For the information Technology professional it is a powerful tool and mechanism for managing distributed databases. To the business community it represents a new market. To the Information Science Community it represents a new means of extending and enhancing access to distributed information resources. Digital libraries are the logical extensions and augmentations of

physical libraries in the electronic information society. Extensions amplify existing resources and services and augmentations enable new kinds of human problem solving and expression. As such, digital libraries offer new levels of access to broader audiences of users and new opportunities for the library and information science field to advance both theory and practice. One of the earliest definitions included in a source book states that a 'Digital Library is (1) a service; (2) an architecture; (3) a set of information resources, databases of texts, numbers, graphics, sound, video, etc.; and (4) a set of tools and capabilities to locate, retrieve and utilize the information resources available. The users and contributors would range from students, teachers, scholars, librarians, authors, publishers, information providers, academic, research and all other institutions'.

The purpose of digital library is to facilitate access to electronic information, print material, and library services to ensure that the information needs of the user community are met, regardless of their location. It enables libraries to deliver valuable information that already exists within library walls electronically to patrons outside those walls, to create new digital resources locally, and to integrate local digital resources with remote ones. The number of people accessing

digital collections through the WWW also shows explosive rates of growth. Finally, internationalization is making a “global information environment” a reality.

### 3. REVIEW OF RELATED LITERATURE

Parida emphasized the significance of digital libraries in the present information era and described their substructure and technological requirements like hardware, software, electronic resources and different types of reference services [1]. Sinha highlighted application of the various aspects of library automation and networking, multimedia application and use of CD-ROM databases, OPAC and Internet Services, Creation of in-house databases of books, serials, theses, projects and experts, computer based library and information activities and services [2]. Mulla (et al) described the core elements of how libraries should design and developing the library systems, in order to satisfy the gooleans of the twenty first century [3]. They also gave a brief overview of hardware and software requirements for developing a state of art digital library. Finally, they have discussed the benefits of digital libraries over the conventional libraries. Varadharajan stated in his study “Digital Libraries and Library Professional in the Changing Scenario” that a series of training courses on digital libraries could provide a good balance of topics covering the technological, technical, management and social issues [4]. Alessio, et al. described CRADLE (Cooperative-Relational Approach to Digital Library Environments), a metamodel-based framework and visual language for the definition of notions and services related to the development of digital libraries [5]. A collection of tools allows the automatic generation of several services, defined with the CRADLE visual language, and of the graphical user interfaces providing access to them for the final user. The effectiveness of the approach is illustrated by presenting digital libraries generated with CRADLE, while the CRADLE environment has been evaluated by using the cognitive dimensions framework. Liu found that the extent to which undergraduate and graduate students in China differs in their digital library use [6]. Unlike the factors

promoting digital library use, non-use factors, perceived influences, and degree of satisfaction are quite different between undergraduate and graduate students due to their differing emphases and expectations for information. The implications for digital library services are also discussed.

### 4. OBJECTIVES

1. To find out the status of minority of SFEC in Tamil Nadu;
2. To know the availability of Digital library software facilities in SFEC libraries in Tamil Nadu;
3. To know the Digital library software facilities among the self engineering college libraries in Tamil Nadu;
4. To analysis the Digital library software used in sample libraries.

### 5. METHODOLOGY

This study aimed at to analyse the status of Digital Library software facilities available in the libraries of self engineering colleges in Tamil Nadu. Nearly 200 questionnaires were distributed among the library professionals of the engineering Colleges libraries in Tamil Nadu. Nearly 140 responses were received. The relevant data are collected from the librarians of the concerned institutions by employing mailed questionnaire method. The respondents have properly answered the queries posed by the researcher. After completion of answering, they returned the questionnaires to the researcher. To test the hypotheses, chi-square test is applied. The general data interpretation is done with the application of percentage analysis, analysis of variance and chi-square test.

### 6. DATA ANALYSIS AND INTERPRETATION

The self financing engineering colleges in Tamil Nadu are classified under three categories by the government. Such as; non-minority institutions, religious minority institutions and linguistic minority institutions. The non minority institutions denote the

institutions which have non-minority status. The Religious minority indicates the institutions which were categorized as religious minority institutions by the Tamil Nadu state government and it includes Christian

and Muslim minorities. The Linguistic Minority Institutions refers to the institutions which were categorized as linguistic minority by the Tamil Nadu state government based on the language.

**Table 1 Year of Establishment of SFE Colleges in Tamil Nadu -Status of Minority**

Status of Minority	1981-85	1986-90	1991-95	1996-2000	After 2001	Total
Non-Minority	9 (9.28)	4 (4.12)	17 (17.50)	30 (31.05)	37 (38.10)	97 (100.00)
Religious Minority	4 (19.04)	-	3 (14.30)	10 (47.62)	4 (19.04)	21 (100.00)
Linguistic Minority	-	1 (4.54)	3 (13.63)	7 (31.80)	11 (50.00)	22 (100.00)
Total	13 (9.29)	5 (3.57)	23 (16.43)	47 (33.57)	52 (37.14)	140

(Figures in parentheses denote percentage)

Table 1 shows the year of establishment of various self-financing engineering colleges in Tamil Nadu with the status of minority. In total there are 97 non minority status, 21 religious minority and 22 linguistic minority status self financing engineering colleges in Tamil Nadu. Among the 97 non minority status colleges, 38.10% of the institutions have been established after

2001. Out of the 21 religious minority institutions, 47.62% of the institutions were started during the year 1996-2000 and 4 institutions after the year 2001. Out of the 22 linguistic minority institutions 50% of the institutions have been established after 2001. It is also evident from the discussion that more than 70% of the institutions were established after the year of 1996.

**Table 2 Availability of Digital Library Used SFEC Libraries in Tamil Nadu**

Status of Minority	Yes	Percentage	No	Percentage	Total
Non- Minority	43	44.32	54	55.68	97
Religious Minority	15	71.42	6	28.58	21
Linguistic Minority	14	63.63	8	36.37	22
Total	72	51.42	68	48.57	140

Table 2 shows the status wise distribution of digital library software availability in the self financing engineering college libraries in Tamil Nadu. Out of 97 non-minority status institutions only 43 institutions has the digital library software in their libraries. Out of the 21 religious minority institutions, 15 (71.42%) college libraries are using the digital library software. In the status of linguistic minority institutions the 14 libraries out of 22 are using the digital library software.

The table 3 shows the status wise distribution of digital library software used in the self financing

engineering college libraries in Tamil Nadu. Out 43 non minority institutions 16 libraries are using DSpace digital library software. But only four libraries are using ACADO. Among the linguistic minority institution libraries four number of libraries i.e., 28.58 percent are using Green stone digital library software. In the case of linguistic minority institutions Green Stone digital library software occupy the first position and E-Print in the last position. So, all the libraries are using free open source software but never using in-house prepared digital library software.

**Table 3 Type of Digital Library Software used the SFEC Libraries Tamil Nadu**

Status of Minority	E-Print	Green Stone	D pace	Fedora	ACADO	Total
Non-Minority	9 (20.93)	8 (18.60)	16 (37.20)	6 (13.95)	4 (9.30)	43
Religious Minority	3 (20.00)	6 (40.00)	3 (20.00)	2 (13.13)	1 (6.67)	15
Linguistic Minority	2 (14.28)	4 (28.58)	2 (14.28)	3 (21.42)	3 (21.42)	14
Total	14 (19.44)	18 (25.00)	21 (29.16)	11 (15.27)	8 (11.11)	72

(Figures in parenthesis denote percentage)

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	108.4	2	54.2	6.81761	0.018695	4.458968
Columns	36.4	4	9.1	1.144654	0.401843	3.837854
Error	63.6	8	7.95			
Total	208.4	14				

Source: Computed

The anova two- way model is applied for type of digital library software used in the self financing engineering college libraries in Tamil Nadu. At one point the computed anova value is 6.81 which is greater than its tabulated value at 5 percent level of significance. Hence variation with respect to backup device used in the libraries is statistically identified as significant. In another point the computed anova value is 1.14 which less than its tabulated value at 5 percent level of significance. Hence the variation in institution status wise is statistically identified insignificant as with respect to digital library used in the libraries of the selected engineering college libraries.

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**Chi-square Summary Result**

Chi square Calculated value	6.984
Degrees of freedom	8
Chi square table value 5%	15.5

The Chi-square test is applied for type of digital library software used in the self financing engineering college libraries in Tamil Nadu. The computed Chi-square value is 6.984 which less than its tabulated value at 5 percent level of significance. Hence the difference among the institution status wise is statistically identified as insignificant with respect to digital library software facility.

**7. CONCLUSION**

The findings of the digital library software used in the self-financing engineering college libraries in Tamil Nadu reveal that more than half of the libraries use digital library software. The DSpace software is used by most of the libraries and the use of Greenstone software is in the

second position. But, a minimum number of libraries are using ACADO digital library software. And also, in the status of minority wise analysis, two thirds of religious minority and linguistic minority institution libraries have digital Library software facility. A maximum number of non minority institution libraries have the ACADO digital library software when compared to other religious minority institution. The Digital library software facility has dramatically changed the old concept of libraries in new information storage and retrieval mechanism has now become very faster and easier.

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