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# Trends and Challenges in the Utilization of Web-Based Information Repositories for the Academicians of University Libraries in Tamil Nadu

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#### **Abstract:**

A Web-Based Information repository is a technology used to collect and organize multimedia information such as images, text, audio, video, software, and scientific data. It improves knowledge management and provides high-speed access to the database. The researcher made an initiative to analyze the trends in information services accessed from the university library website and to analyze the satisfaction of the respondents with Web-Based Information Repositories available in the sample unit. The target population of this study is research scholars in various departments of Madurai Kamaraj University, Madurai. The questionnaire method has been used for the collection of data required. A well-designed questionnaire was personally distributed to selected academicians covering different university departments. On the whole, 150 questionnaires were distributed to the respondents. Only 125 teaching faculties have responded to the request, with a response rate of 83.33%. The data was then tabulated and analysed for results and discussions.

**Key Words:** Trends and Challenges, Web-Based Information Repositories, Utilization, Academicians, University Libraries.

#### 1. Introduction:

A Web-Based Information Repositories is a technology that collects multimedia information (such as images, text, voice, audio, video, software, and scientific data), organizes, preserves, and manages it, and provides high-speed interlink over the database. It has to address issues related to intellectual property rights protection, access authority, and data safety. A web-based library is an information system that uses a database to organize web-based information and provide services to the consumer via the network. The benefits of web-based libraries are widely recognized by both commercial interests and public bodies. They provide users with improved access to electronic and audiobook technology, as well as new forms of communication such as wikis and blogs. A significant advantage of the web-based Library is increased accessibility to users.

- → Users of web-based libraries can access them from anywhere in the world, without needing to visit the library in person.
- → Round-the-clock availability: People can gain access to information at any time, night or day.
- → Multiple access: The same resources can be simultaneously accessed by several institutes and patrons.
- → Information Retrieval: The user can use any search term (word, phrase, title, author or subject) to search the entire collection.
- → Preservation and Conservation: Digitised collections and born web-based objects pose many preservation and conservation concerns that analogue materials do not.
- → Space: Web-based repositories can store much more information; simply because web-based information requires very little physical space to contain them, and media storage technologies are more affordable than ever before.
- → Added value: Certain characteristics of objects, primarily the quality of images, may be improved.

Technological standards change over time, and forward migration must constantly be considered in every Library. Migration means transferring an unstable web-based object to another more stable format, operating system or programming language. Migration allows the ability to retrieve and display web-based objects in danger of becoming extinct. But with the ever-changing nature of computer technologies, migration enables this never-ending race to transfer web-based objects to new and more stable formats. The new platform may not capture the complete integrity of the original thing (Breeding. Marshall, 2002). This issue can dominate preservation policy and may focus more on instant user access in place of physical preservation.

## 2. Profile of sample unit: Madurai Kamaraj University:

Madurai Kamaraj University (M.K.U.) is a public state university located in Madurai city in southern Tamil Nadu, India. It was established in 1966. In 1978, the name was changed to Madurai Kamaraj University to honour K. Kamaraj, former Chief Minister of Madras State. Madurai Kamaraj University is one of the 15 universities in India with a 'University with Potential for Excellence' status. Currently, the School of Biological Sciences of this university is serving as the 'UGC-Networking Resource Centre in Biological Sciences, intending to promote collaborative research in the field of Biology. The School of Biological Sciences consists of the 'Excellence Unit for Cancer Genetics for its extraordinary research in Cancer Biology and respective genetic contexts. The School of Biotechnology consists of 'The Centre for Excellence in Bioinformatics' and 'Centre for Excellence in Innovative Biotechnology'. This university is widely known for its Bhatnagar awardees and eminent scientists. This one is one of the few state universities in India that possesses the glory of having Bhatnagar awardees as its former faculty. In 2021, the university was awarded an 'A++' grade from 'The National Assessment and Accreditation Council (NAAC) in the 4th cycle. Apart from the respective Biology segments, other schools designed for Applied Sciences and Humanities have potential in their academic and research areas. School of Chemistry of Madurai Kamaraj University is also one of the renowned Academic bodies all over India for its research and teaching-learning aspects.

#### 3. Review of Literature:

Balasubramanian P and Santhanakumar E (2022) analysed a "Torrential impact of discursive digitised repositories in the university libraries of Tamil Nadu". The study has questionnaire-based survey methods. A questionnaire was designed and administered to the users of university

libraries in Tamil Nadu to investigate information-seeking behaviour. Data were collected through the surveys based on a well-structured questionnaire. The study showed that members used various information sources to pursue their teaching, research and academic work. The study focused on the use of online resources. Some respondents preferred books/reference books, law reports, statutes and journals. It revealed that several respondents preferred ICT-based library resources to print resources, with most stating that they have excellent computing skills. This use may be due to the availability and advancement of e-resources. It concludes that it will help library and information science and its users.

Viji P, Balasubramanian P. (2020) The study examines the use of library resources and services among postgraduate students in Manonmaniam Sundaranar University Tirunelveli Library. The questionnaire was used as the core research instrument. 75 copies of the questionnaire were circulated to the students; the return rate was 68%. The significant findings were; that the majority of the postgraduate students use the library regularly. Their primary purpose in visiting the library is to consult research materials. They used more internet sources, and their major challenge was a lack of time. They were also satisfied with the library services. Suggestions were offered to improve the library services.

**Srinivasa Rao** (2020) This article mainly focuses on the Network Infrastructure facilities such as connectivity, cables, bandwidth and spread, etc., accessible at the National Institute of Technology (N.I.T.) libraries in India. Libraries of higher education systems use Network Infrastructure (N.I.) facilities to store, disseminate and retrieve information and extract the maximum outcome. The study finds that most of the library's local network is divided into campuses. In the usage of network cables, optical fibre and CAT5/enhanced cables hold an equivalent share of the percentage. Most libraries have internet connections and most (60%) use leased connections. 50% of institution libraries have a network bandwidth of 6.0 Mbps and above. All the institutions have campus-wide network connections to different units, including departments. Seventy-five per cent of them have ties to student halls/hostels, and some have links to faculty's and officers' residences. This paper also indicates South zone libraries have more (78%) network infrastructure facilities than the other zone libraries.

Hari Narayanan (2019) explains that the literature review was conducted to reveal the information use and the knowledge-sharing methods that apply to the study of the patient. Information has been identified as a critical factor in improving health outcomes, self-management, and patient satisfaction. New ways of understanding how practitioners build knowledge for medical decision-making and self-care are needed. Patient education occurs beyond the boundaries of the healthcare systems, so practitioners may wish to broaden their connections with diverse organisations that can enhance medical and health-related knowledge. Practitioners are increasingly interested in practical knowledge management across organisational and professional boundaries to improve public services. It identifies a set of methods, structures, and ethics of "informal" and unauthorised transfer of information. It suggests that these can offer valuable lessons for further developing the study of knowledge-sharing methods, practices and behaviors in all settings.

## 4. Statement of Problem:

A Web-Based Information Repositories is a collection of online resources. There are two primary types of Web-Based Information Repositories: institutional and disciplinary. Institutional repositories are collections of institution-specific resources. Web-based repositories are developing rapidly as a critical element of research cyberinfrastructure. Even when research institutions are grappling with difficult budget decisions in the current economic environment, they need to have a strategy for providing repository services. Libraries are making diverse contributions to developing many types of web-based repositories, particularly those housing locally created web-based content, including new web-based objects or digitised versions of locally held works. In some instances, libraries are entirely managing a repository and its related services, but they are often working closely with other stakeholders at their institutions to develop repository services jointly. The literature review has highlighted that contemporary research focuses on technology-related matters and library service processes. It is essential to focus on the user perspective of this change to understand how to manage the web-based repository resources. A version of user experiences and expectations would enable library professionals to address this problem more effectively. Hence, the research is initiated under the title" The present study aims at understanding trends and challenges in the utilization of Web-Based Information Repositories in universities in Tamil Nadu."

## 5. Objectives of the study:

- → To analyse trends in information services accessed from the university library website.
- → To analyse the satisfaction of the respondents with Web-Based Information Repositories available in the sample unit.

#### **6. Null and Alternative Hypotheses:**

**H.o.**: There is no significant association between the Respondents' opinions of web-based library services provided by the university libraries and their satisfaction

 $H_1$  There is a significant association between the Respondents' opinions of web-based library services provided by the university libraries and their satisfaction

# 7. Scope of the study:

The scope of the study defines the area in which the research is being directed. The researcher selected Madurai Kamaraj University Library as a sample unit. The target population for this research are academic users of the library resources, which includes students and faculty. The researcher only considered the faculty of Madurai Kamaraj University.

## 8. Methodology:

The target population of this study is research scholars in various departments of Madurai Kamaraj University, Madurai. The questionnaire method has been used for the collection of data required. A well-designed questionnaire was personally distributed to selected academicians covering different university departments. On the whole, 150 questionnaires were distributed to the respondents. Only 125 teaching faculties have responded to the request, with a response rate of 83.33%. The data was then tabulated and analysed for results and discussions.

#### 9. Limitations:

- ☐ The sample size is confined to 125 respondents.
- The researcher followed a stratified random sampling technique to select the respondents.
- Y The research is confined to primary data collection, and hence there is no scope for secondary data.

# 10. Data Analysis and Interpretation:

Table 1
Frequency of the Library Visit

Sl.No	Frequency	No. of Respondents	Percentage
1	Almost daily	42	33.60
2	Thrice a week	31	24.80
3	Twice a week	24	19.20
4	Once a week	17	13.60
5	Occasionally	11	8.80
	Total	125	100

(Source: Primary Data)

Fig 1

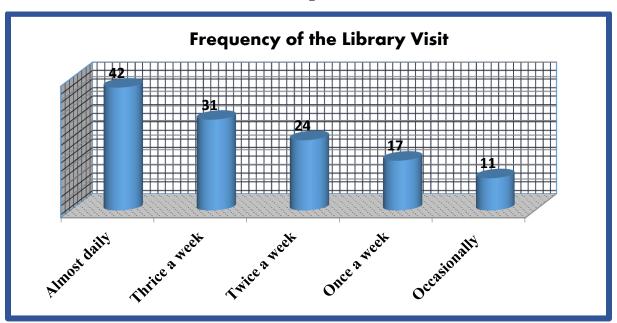


Table 1 shows the segmentation of the selected respondents based on the frequency of visits to the university library. It is perceived that 34 per cent of students visit the library daily. It is interesting to find that 25 per cent of the users see a week thrice, 19 per cent twice a week, 14 per cent once a week and only 9 per cent of respondents use the library occasionally. Further, it is noted that a maximum of 33.80 per cent of respondents visit the library daily.

Table 2

Types of Information Sources Used

Sl.No	Frequency	No. of Respondents	Percentage
1	E-Books	23	18
2	E-Journals	18	14
3	Newspapers	25	20
4	Reports	11	9
5	E-Resources	48	38
Total		125	100

(Source: Primary Data)

TYPES OF INFORMATION SOURCES USED

23

Books Journals Newspapers Reports E-Resources

Fig 2

Table 2 reveals the type of information preferred by the academic users of Madurai. 38 per cent of the respondents use e-resources, 20 per cent use newspapers, 18 per cent books, and 14 per cent use journals. Very few respondents use reports (9 per cent).

Table 3

Types of Sources Used to locate the information

Sl.No	Frequency	No. of Respondents	Percentage
1	Magazine	13	10
2	Dailies	17	14
3	E- sources	39	31
4	Reading books	14	11
5	Watching T.V	6	5
6	Listening Radio	3	2
7	From Professors	15	12
8	Through their friends	8	6
9	Reports	3	2
10	Library Display	7	6
	Total	125	100

(Source: Primary Data)

Table 3 shows that 31 per cent of users have got their information from E- sources while 14 per cent of them prefer Dailies and 12 per cent from Professors for gathering the data. 11 per cent of respondents read books, and 6 per cent get information through their friends, respectively.

Table 4

Trends in information services are accessed from the university library website.

Sl.No	Kinds of information services	WAS	Rank
1.	User Information	3.942	II
2.	New Arrivals Notification	4.163	I
3.	Library Circulars	3.647	IV
4	Web Link	3.795	III
5	Library Events	3.528	V
6	Other library-relevant information	3.143	VI

Table 4 shows the ranking of information services accessed from the university library website. The top three are "New Arrivals Notification", "User Information", and "Web Link", with weighted average scores of 4.163, 3.942, and 3.774, respectively. "Library Circulars" and "Library Events" are ranked fourth and fifth.

Table 5

Respondents' Opinions about the Ranking of Web Technologies

Sl.No	Web Technologies	Garret Score	Rank
1.	The World Wide Web	3.745	II
2.	E-Learning materials	3.984	I
3.	Chatting	3.344	IV
4	Web-based audio	2.875	VII
5	Web-based video	2.613	VIII
6	Webmail	3.582	III

7	Download software from the Web	3.076	VI
8	Social media	3.262	V
9	Social networking sites	2.417	IX

Table 5 shows respondents ranked web technologies based on their perceived importance. The top-ranked statement was "E-Learning materials," with a Garret Score of 3.984. The second rank was given to "The World Wide Web," while "Webmail" was ranked third. "Chatting" was assigned the fifth rank, with "Social media" in sixth place. Finally, the variable "Download software from the Web" was understood to be in fourth place.

Table 6

Respondents' Opinions about the Ranking of Web Resources

Sl.No	Web Resources	WAS	Rank
1.	E-Books	2.876	V
2.	E-Journals	3.468	II
3.	E – Databases	3.762	I
4	E - Thesis, Projects, Dissertations	3.421	III
5	E-portfolios	2.649	VII
6	Digital repositories	3.172	IV
7	Web Index & Web catalogues	2.753	VI
8	Others	2.465	VIII

(Source: Primary Data)

Table 6 reveals the weighted average score-based ranking of respondents' opinions about the importance of web resources. The first rank is allotted to "E – Databases" with an average score of 3.762, followed by the second rank allotted to the variable "E-Journals and the third rank is assigned to E - Thesis, Projects, and Dissertations.

Table 7
Search technique used to access Web Resources

Sl.No	Search technique	Se	earch technique	WAS	Rank	
51.140	Search technique	Always	Sometimes	Rarely	WAS	Kalik
1.	Basic Search	46	42	37	3.241	III
2.	Phrase Search	37	45	43	2.678	V
3.	Advanced Search	65	37	23	3.938	I
4.	Field Search	39	44	42	3.127	IV
5.	Direct search	59	44	23	3.410	II
6.	Others	46	42	37	2.584	VI

Table 7 indicates the Search technique used by the selected respondents to access the web resources. It is understood that the first rank was given to the "Advanced Search" with a mean score of 3.938, the second rank was allotted to "Direct Search" with a score of 3.410 and the third rank was assigned to the technique "Basic Search" with a mean of 3.241. Further, the fourth rank was allocated to the method "Field Search", the fifth rank was assigned to "Phrase Search", and the last was allotted to the other techniques in search.

Table 8

Preference to download the Web Resources

Sl.No	Search technique	Se	earch technique	es	WAS	Rank
	•	Always	Sometimes	Rarely		
1.	PDF	67	36	22	4.122	I
2.	VIDEO	45	42	38	3.618	IV
3.	PPT	42	37	46	3.283	VI
4.	MS-WORD	57	44	25	3.984	II
5.	HTML	41	44	40	3.156	VII
6.	XML	39	43	43	2.948	IX
7.	IMAGES	48	42	35	3.792	III
8.	NOTEPAD	42	37	46	3.473	V
9.	ANIMATION	38	39	48	2.671	X
10.	AUDIO	40	48	38	3.079	VIII
11.	MS-EXCEL	32	44	49	2.375	XII
12.	COMPRESSED	37	40	48	2.462	XI
13.	OTHERS	37	46	43	2.197	XIII

According to Table 8, the respondents preferred downloading information from web sources in a certain way. The top-ranked method was downloading in PDF format, with a weighted average score of 4.122. MS-WORD came in second with a score of 3.984, followed by IMAGES in third place. The video was ranked fourth, and NOTEPAD and PPT were ranked fifth and sixth, respectively.

Table 9

Respondents' Opinions about the web-based library services provided by university libraries under the head "Miscellaneous."

"v" No	Variables	Mean	S.D	C.V	"t" value	Rank
1V	E-mail based services	2.977	0.954	32.091	72.486	V
2V	Online staff list	2.381	0.961	40.432	57.532	XVII
3V	Online Feedback form	2.968	1.135	38.301	60.734	XIII
4V	Online contact addresses	3.062	1.123	36.700	63.383	X
5V	Online subject gateways	2.525	0.813	32.220	72.197	VI
6V	Online library news	2.341	1.083	44.364	74.193	Ι
7V	Online library holidays list	2.477	0.833	33.672	69.082	VII
8V	Online helpdesk services/Ask-a-Librarian	2.770	1.017	36.722	63.346	IX
9V	Online general library policies	2.719	1.067	39.264	59.244	XVI
10V	Online integrated push-based – services (e-mail-based)	2.469	1.087	44.065	73.603	IV
11V	Web-based library tutorials	2.587	1.031	39.917	63.143	XI
12V	Web-based user education/virtual- library tour	2.719	1.122	41.334	59.245	XIV
13V	Online in-house library bulletins	2.823	0.951	32.309	73.067	II
14V	Library blogs	2.258	0.958	40.706	57.993	XV
15V	Online mailboxes for the user- comments or suggestions	2.815	1.131	38.561	61.220	XII
16V	Library forums (e-mail based)	2.904	1.119	36.949	63.890	VIII
17V	Web-based FAQ	2.394	0.810	32.438	72.775	III
18V	Online map of the library	2.643	1.115	42.207	55.114	XVIII

In Table 9, the respondents' opinions regarding the web-based library services provided by university libraries are presented under the category "Miscellaneous". According to the table, the variable "Online library news" received the highest rank with a "t" value of 74.193, followed by the variable "Online in-house library bulletins", which received the second rank with a "t" value of 73.067. The third rank was given to the variable "Web-based FAQ". The fourth and fifth ranks were allotted to "Online subject gateways" and "E-mail based services", respectively.

 $Table\ 10$  Association between the Respondent's opinions of web-based library services provided by the university libraries and their satisfaction

	Unstand Coeffi		Standardised Coefficients	,	<b>~</b>
Variables	В	Std. Error	Beta	t	Sig.
(Constant)	603	.077		-7.826	.000
1V	.060	.010	.090	5.816	.000***
2V	.015	.021	.014	.746	.456*
3V	012	.023	014	538	.590*
4V	.453	.021	.520	22.041	.000***
5V	.368	.024	.350	15.563	.000***
6V	.219	.025	.250	8.631	.000***
7V	.259	.032	.289	8.091	.000***
8V	081	.023	102	-3.556	.000***
9V	048	.056	041	861	.390*
10V	.819	.043	.508	19.216	.000***
11V	.299	.025	.304	11.983	.000***
12V	782	.035	759	-22.104	.000***
13V	.260	.038	.173	6.816	.000***
14V	.078	.041	.091	1.889	.059*
15V	.529	.027	.465	19.560	.000***
16V	.015	.021	.014	.746	.456*
17V	.317	.026	.286	12.028	.000***
18V	.284	.027	.262	10.362	.000***
"R"	0.849				
"R <sup>2</sup> "	0.721				
Adjusted "R <sup>2</sup> "		0.719			
"F" value	31.	231	Sig. Value .000		

<sup>\*\*\*</sup> Significant at 1 per cent level,

<sup>\*</sup> Not Significant 5 per cent level

According to Table 10, Regression analysis was conducted to determine the relationship between the opinions of web-based library services provided by university libraries in Tamil Nadu under the category "Miscellaneous" and their satisfaction level. The results showed that the "R" value, "R2", and adjusted "R2" values exceeded the required threshold level, indicating that the model is suitable for analysis. Additionally, the "F" ratio was 31.231, confirming that the model is fit for further analysis. The researcher considered eighteen variables under the "Miscellaneous" category, of which thirteen significantly impacted respondents' satisfaction. In comparison, five variables, namely the online staff list, online feedback form, online general library policies, library blogs, and library forums (e-mail based), did not affect respondents' satisfaction with the web resources of the university libraries.

## 11. Findings:

- → It is perceived that 34 per cent of students visit the library daily. It is interesting to find that 25 per cent of the users see a week thrice, 19 per cent twice a week, 14 per cent once a week and only 9 per cent of respondents use the library occasionally. Further, it is noted that a maximum of 33.80 per cent of respondents visit the library daily.
- → It is found that 38 per cent of the respondents use e-resources, 20 per cent use newspapers, 18 per cent books, and 14 per cent use journals. Very few respondents use reports (9 per cent).
- → The study revealed that 31 per cent of users have got their information from E- sources while 14 per cent of them prefer Dailies and 12 per cent from Professors for gathering the data. 11 per cent of respondents read books, and 6 per cent get information through their friends, respectively.
- → The researcher considered eighteen variables under the "Miscellaneous" category, of which thirteen significantly impacted respondents' satisfaction. In comparison, five variables, namely the online staff list, online feedback form, online general library policies, library blogs, and library forums (e-mail based), did not affect respondents' satisfaction with the web resources of the university libraries.

#### 12. Conclusion:

Libraries are important communal places that contribute to the well-being of our community. They offer education, relaxation, and access to books, magazines, music, and movies that may need to be more affordable. In addition, libraries provide a safe space for meeting friends, using the internet, or getting help with school assignments. People of all ages, including children, youth, and older people, are welcome in libraries. As sustainability becomes more necessary, libraries are becoming an important provider. Academic libraries are mainly located on school, college, or university campuses. Their primary function is to serve students and faculty, but some public, academic libraries are partly or wholly accessible to the general public. These libraries contain books, newspapers, journals, research papers, articles, and question banks, including previous year's question papers. The web technology of the internet and the World Wide Web is increasingly demanding in all academic activities to obtain a wealth of information. We can serve as a tool for easily outweighing implementing financial constraints and to the creativity of teaching, the efficiency of learning the excogitate of research. The possibility of an active role of the library in providing information through web-based resources is an integral part of user service. Much of the technology diffusion library has focused on adopting information access and disseminating information about resources and services. Concerning web technology dimensions, a technology related to appropriate hardware and software, infrastructure security, standards through computerised library services, applicationoriented regarding resource requirements, web-based application development for providing digital content, storage and access to abilities to learning requirements associated with the intention of technology innovation to libraries They offer specific course-related resources such as copies of textbooks and article readings, which are loaned to students for a short period. Academic libraries provide a quiet study space for students on campus and group study space, such as meeting rooms. Libraries serve as a gateway for students and researchers to access various print/physical and digital resources.

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