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Usage of Electronic Resources in Science Subjects by the Madras University Library System

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Abstracts **- This study is aimed to analyze the use of electronic resources and services in science subjects by the Madras University Library System. Post graduate students, Research scholars, faculties were selected for this study. Questionnaire method was adopted to collect the data. Out of 745 questionnaires 724 (97%) were received from respondents. There are about 161 Educational Institution affiliated to University of Madras of which 15 are Government Colleges, 2 University Constituent Colleges, 24 Aided Colleges, 68 Self Finance Colleges and 52 Research Institutes. Out of these 161 Educational Institutions 136 offer Science courses. Apart from this the university itself has31 departments catering to Science subjects spread over 3 different campuses. Altogether 167 Institutions, affiliated to University of Madras, are offering courses in science subjects. Out of these, 31 University departments have been selected for the study.**
Keywords: **Electronic Resources and Services, Madras University Library System, Science Campus, Science Subjects, MOOCs**

I. INTRODUCTION

Libraries are the Information Centres providing knowledge for the entire Higher academic Institutions. Today, Libraries have undergone a complete diversion from their role of being a warehouse of information resources and custodian of traditional documents in various format to the provider of several information services, using tailor made systems and applications suitable for various information seeker. From mere Librarians they have now become Information Managers and Knowledge Honers.Thus Electronic resources of Information has become an integral part of any library and we need to study the present usage, impact and future requirements in order to help the nation to be in the forefront of knowledge and Technology.

II. REVIEW OF LITERATURE

Abdul Latheef & Thiruvengada Mani, T.K. (2016) examined the Digital Preservation of print and Digital Information in higher educational institutions and given various suggestions to improve usage of e-resources. They have also studied how print and digital information are preserved and utilized in those institutions.

Franklina AdjoaYebowaah (2017) did a case study to examine the use of electronic resources by lecturers of the University for Development Studies, Wa campus. Primary data were collected from 80 lecturers through the use of a simple random sampling procedure. The data were collected with the aid of a questionnaire and analysed through the use of binary logistics regression model. The results indicate that 88.8% of the respondents were users of the Library and 65% were aware of the availability of e-resources in the Library. This suggests that awareness is high but utilization is low. The determinants of e-resource utilisation in the Library include purpose of Library visit and sources of awareness of the e-resources in the Library. Besides, it was discovered that inadequate Library infrastructure, low internet bandwith, and inadequate trained library staff were the major challenges confronting the use of e-resources of the Library.

Joshi (2001) found that the book collection was found inadequate to meet information needs of the users and its growth was very slow. Journal subscription was not satisfactory, libraries were understaffed. Author recommended that Indian Council for Agricultural Research and Agricultural Universities should regularly organize orientation programmes for librarians

Kanakachary (1989) assessed the performance of engineering college library, Osmania University, Hyderabad. For study, total 50 questionnaires were distributed and 27 (54%) were received back. It was followed by personal interviews with users and library staff. 66.7% users were satisfied, while 33.3% were dissatisfied with regard to quality and standard of periodicals on subscription. About 85% users were unaware of catalogue. Majority of users wanted change in library timings. More than 90% users were not satisfied with physical facilities of library.

Lohar and Kumbar (2007) evaluated the use of libraries by teachers. The results of the study revealed that 52.25% users spent less than an hour and more than half an hour only in libraries per week. Only a small fraction of users was familiar with inter library loan service. Accessibility of the reading material, its adequacy, users' opinion about library services such as lending service, pattern of search for latest literature, inter-library-loan, photocopy service, orientation, computerization of libraries, the Internet, etc. were also examined.

Sangam and Hadimani (2004) examined the use of Online Public Access Catalogue by research scholars in Dharwad. The authors examined the users frequency of use and purpose of consulting OPAC, difficulties in locating books, OPAC for periodicals and other reading material, time spent in using it, approaches followed to locate material, assistance from library staff in using OPAC, etc. Some users suggested for up to date library guides explaining how to use catalogue.

Sanjeev Kumar and Mishra (1993) conducted a survey to ascertain the suitability of opening hours, frequency of library use, most frequently used services and helpfulness of library staff. Library hours were found convenient to users. Borrowing books was the main reason to visit library followed by use of reference material and periodicals. Lending service was most frequently used followed by photocopy service. Majority of the users were satisfied with library.

Tintswalo Pascalis Tlakula (2017) from the Information Science Department, University of Venda, South Africa, which was one of the previously disadvantaged universities in South Africa, identifies the different electronic resources used at the university. Suggestions were made to the university, the university library, university librarians and the Library Association of South Africa on how to enhance the use of electronic resources.

STATEMENT OF THE PROBLEM

The present study aims to analysis the Use of Electronic Information Resources and Services in Science subjects by the Madras University Library System.

III. OBJECTIVES OF THE STUDY

To evaluate the study, following objectives are framed in accordance with the scope of this investigation.

1. To know the availability of electronic resourcesin Science subjects in the Madras University Library System.
2. To study the Frequently used electronic resources and their ranking.
3. To study the electronic services offered for Science subjects in the Madras University Library System.
4. To study the frequency of using library by the respondents.
5. To Identify the purpose of using library.
6. To evaluate the library electronic resources and services offered by the library with the perception of the respondents.
7. To know the suggestions given by the respondents to improve the electronic resources and services of the library.

IV. METHODOLOGY

This study examines the Use of electronic Resources and Services in Science subjects in the Madras University Library System. This study is carried over in the Science departments situated in all the three campuses Chepauk, Guindy and Taramani. The data were collected, organized and tabulated according to the objectives of the study and analysed by using statistical tools, such as percentage and ranking analysis.

V. ANALYSIS AND INTERPRETATION

745 questionnaires were distributed to the PG students, Research scholars and Faculties. Among 745 distributed724 (97%) Questionnaires were received and the data were analysed.

Table below shows the gender wise distribution and the category wise distribution. From the 724responses received, 410 (56%) were from the Male respondents and 314 (44%) were from the female respondents. From the table it is observed that the Number of respondents were highest in the PG student's category 402(55.5%). It is followed by the Research scholars 274 (37.8%), and Faculties 48 (6.6%).

TABLE I GENDER WISE DISTRIBUTION

Gender	No. of Respondent	Percentage
Male	410	56
Female	314	44

A look in to the age wise analysis shows that majority of respondents are of the age group 18 to 30, justifying the fact that most of the respondents are Post Graduate students, followed by Research Scholars and faculty.

TABLE II AGE WISE DISTRIBUTION OF RESPONDENTS

Age Group	No. of Respondent	Percentage
18 – 30	584	80.66
31 – 40	66	9.11
41-50	46	6.35
Above 51	28	3.86

Among the respondents the maximum (402) were Post Graduate Students, followed by Research Scholars and Faculty with 274 and 48 respectively.

TABLE III STATUS OF THE RESPONDENTS UNDER STUDY

Status	No. of Respondent	Percentage
Faculty	48	6.6
Research Scholar	274	37.8
Post Graduate	402	55.5
Under Graduate	0	0

We also notice a positive trend in the frequency of visit to the Library with 584 admitting that they visit the Library every day. Being components of departments with advanced research concern, visiting the Library has become anintegral part of their career.

TABLE IV FREQUENCY OF ACCESS TO LIBRARY

Frequency	No. of Respondent	Percentage
Everyday	584	80.6
Once in a week	59	8.1
Twice in a week	74	10.2
Once in a month	0	0
Occasionally	7	0.9

From the below table, the resources frequently used by the respondents were tabulated and their ranking were analyzed. From the table highest number 396 (54.7%) of the respondents frequently used E-Journals because the libraries are research oriented. The updated information is an important one for their research progress. It was followed by E- Books 152 (21%), E-Database 108 (14.9%), E- Thesis 56 (7.7%) and E-learning with just 12 (1.6%).

TABLE V TYPES OF E- RESOURCES FREQUENTLY USED

E-Resources	No.of Respondents	Percentage	Ranking
E-Journals	396	54.7	1
E- Bookes	152	21	2
E-Database	108	14.9	3
E-Theses	56	7.7	4
E- Learning	12	1.6	5

Usage of e-Periodicals/journals was the most used e-resource evidently because, the sample under study are basically research departments which are more dependent on the latest information. It was followed by E-Books which are now abundantly available online both through Publishers portals as well as other free portals.

E-Database and E-Theses follow suit with 108 and 56 respectively because of their importance to the Research Departments. Usage of E-Learning, ie. for Massive Online courses is very low, suggesting that even though the respondents are aware of the availability, they are yet to enroll themselves in those courses, which may happen very soon.

For a specific question regarding purpose of their visit to the Library, 38.6% have stated they mainly use the Library for E-resources, their second choice being Reference material. People visiting the library for borrowing books, which was the prime use some years ago, has evidently reduced after availability of e-resources, with only 20.1% respondents.

TABLE VI PURPOSE OF VISITING LIBRARY

Purpose	No. of Respondent	Percentage
Use E-Resources	280	38.6
Reference Materials	247	34.1
Borrow Book	146	20.1
Search/ Browse Internet	31	04.2
Make CD/Print/Photocopy	20	02.7

The study highlights a better usage of the library with 346 (47.7%) respondents affirming that they use the Library for 10 -15 hours per week. Expected best usage of 15 to 20 hours and more than 20 hours a week comes only in the second and fifth position with only 144 (19.8%) and 47 (6.4%) respondents selecting them respectively. The researcher could infer this phenomenon is because of the science students' commitment for spending time in their laboratories also for conducting experiments for their studies. It is felt that spending 10 to 15 hours per week in the library is fairly good for Science students.

TABLE VII TIME SPENT IN LIBRARY

Time Spent	No. of Respondent	Percentage
10 – 15 hours a week	346	47.7
15 – 20 hours a week	144	19.8
6 – 10 hours a week	88	12.1
2 – 5 hours a week	73	10.0
More than 20 hours a week	47	06.4
Less than 1 hour a week	26	03.5

To a question if their library subscribes to E-resources, 702 (96.9%), of the respondents have stated in the affirmative, suggesting that almost all institutions under study are subscribing to the e-resources thus knowing the importance of the same.

Most of the respondents have stated 'slow internet speed' as the main problem they come across while using the e-Resources. 325 (44.8%) of them have stated this as their main trouble factor. 250 (34.5%) of them have observed restricting the availability only to the campus as the second reason. The findings suggest that the institutions should pay more attention to the infrastructure and computer peripherals and also provide maximum internet speed.

TABLE VIII PROBLEMS FACED WHILE USING THE E-RESOURCES

S. No.	Trouble factors	No. of Respondents	Percentage
1	Slow Internet speed	325	44.8
2	Access Restricted to campus	250	34.5
3	Lack of Guidance from Library Staff	126	17.4
4	Non Availability of relevant sources	23	3.1

346 (47.7%) of the respondents are in the habit of directly typing the concerned link to browse the required information from the e-Resources. This only shows that most of them are more knowledgeable in using the internet to harvest relevant information. Only 214 (29.5%) are using search engines to identify the link where their required information could be found and make use of it. The remaining 80 (11%) of them use their Institutions' web portal for browsing the information. Other 54 (7.4%) and 30 (4.1%) are understood to be using the publisher websites and subscribed resource link respectively for their need. This shows that the present-day users are well aware of directly going to the links to get their information.

TABLE IX METHODS FOLLOWED TO BROWSE THE REQUIRED INFORMATION FROM THE E-RESOURCES

S. No.	Information	No. of Respondents	Percentage
1	Typing the Concerned Link	346	47.7
2	Using search engines	214	29.5
3	Institute web portals	80	11.0
4	Publisher websites	54	7.4
5	Using e-Resources subscribed	30	4.1

User perception about the available collection of e-resources were analyzed and tabulated. In the perception of the respondents the opinion about collection of e-resources are as shown in the table.

TABLE X SATISFACTION ON AVAILABLE COLLECTION OF E-RESOURCES

S. No.	Collection of E-Resources	Very Satisfied	Satisfied	Neutral	Dissatisfied
1	E-Journals	238	326	136	24
2	E-Books	198	408	92	26
3	E-Database	186	246	254	38
4	E-Theses andDissertation	98	232	373	21
5	E – Learning Resources	94	225	395	10

To sum up, it is inferredthat 564 (77.9%) were satisfied with the e-journal collections, 596(82.3%) were satisfied with the e-books, 432(59.66%)were satisfied with the e-database, 330(45.58%) were satisfied with the e-theses and 319(44.06%) were satisfied with e-learning resources.

Users perception on the purpose of using the e-resources was analyzed and tabulated. The respondents have answered that they make use of the e-resources for various purposes. Higher among the uses are mentioned hereunder. 648(89.5%) Respondents have stated that they use the e-resources for Study&Research Work,528(72.9%) for Updating Knowledge in their fields, 294(40.6%) for Writing Books/ Research Articles, 196(27.07%) for Preparing to Seminar /Conference, 78(10.77%) for Preparing Competitive Exams,62(8.56%) for Teaching Preparation

As per the over all view of the respondents, the usage of e-Resources were either satisfied or highly satisfied for nearly 90% of them and a megre 10% of them had expressed dissatisfaction with the usage. This shows that the efforts of the Libraries in providing e-Resources has yielded good results and are encouraging.

TABLE XI OVERALL VIEW ON THE USAGE OF E-RESOURES

Overall View	No. of Respondent	Percentage
Satisfied	486	67.1
Highly Satisfied	104	22.6
Dissatisfied	74	10.2

A. Awareness on Massive Open Online Courses

Finally, the participants were asked about their awareness on Massive Open Online Courses. 387 (53.4%) of them have stated that they are aware of the courses. 135(18.6%) of them have stated that they are not aware of such courses, whilst 202 (27.9%) have stated there are not sure about the courses. Even though 53.4 % of the participants are aware of such courses, they have not yet enrolled themselves in such courses, which implies the importance of such courses have not yet reached them fully. However, amongst those who answered in affirmative 204 has said they knew NPETL and 183 said they are aware of SWAYAM. With the present awareness we hope they will participate in such courses in the near future.

TABLE XII AWARENESS ON MASSIVE OPEN ONLINE COURSES

Awareness of MOOCs	No. of Respondent	Percentage
Yes	387	53.4
No	135	18.6
Not sure	202	27.9

VI. CONCLUSION

The University of Madras is one of the oldest Higher Education Centre, with very reputed faculty and very rich academic contribution to the Nation. This study has by and large given satisfying results to the usage of e-resources by the science departments of the University of Madras. The various usage of e-resources in the Library system was also evaluated and the problems analyzed. In the present scenario, with the continued development in ICT, the findings from the study and suggestions received from the respondents need to be considered and suitable remedial

actions would be recommended in order to provide more conducive environment to the users,in order to retain its significance in the Higher Education System of the Nation.

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