Electronic Information Resources And Services: A Study With Special Reference To Selected Arts Colleges Affiliated To Bharathiar University

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Abstract

This article presents a study conducted to explore the utilization and effectiveness of electronic information resources and services in selected arts colleges affiliated to Bharathiar University. The study aimed to assess the availability, accessibility, and usage patterns of electronic resources and to identify the challenges faced in their utilization. A comprehensive research methodology was employed, including surveys, interviews, and data analysis techniques. The findings revealed the current state of electronic resource utilization, patterns of usage among students and faculty, and the effectiveness of electronic information services. Based on the study's results, recommendations were provided to enhance resource utilization and services in arts colleges. This research contributes to the understanding of the impact of digital technologies on the academic landscape and proposes strategies for improvement in the utilization of electronic information resources in arts colleges affiliated to Bharathiar University. This study was conducted to inspect the application of Electronic Information Resources in Arts and Science College Libraries in Bharathiar University affiliated colleges, India. The survey of librarians and library users, semi-structured interviews with librarians, and observational visits in the libraries. This study was confined only to the computerized and automated Arts and Science College Libraries in Bharathiar University affiliated colleges. The analyses revealed that though the libraries had hardware, software, and communication facilities to some extent, ICT-based resources and services were not reaching the users to the expected extent. Library automation in Arts and Science College Libraries in Bharathiar University affiliated colleges was largely commenced during the period 1980-2000. The library catalogue found to be the most popular area for automation. The ICT-based resource used by the largest percentage of the users was the e-mail. Most of the libraries were hampered by lack of funds, lack of infrastructure, and lack of skilled professionals to embark on automation of all library management activities and application of ICT. A good number of the library users were satisfied with the application of ICT in their libraries. A few Students were indicated "inadequate ICT infrastructure" as their major reason for dissatisfaction. Some of the R& D institution got the pattern rights for the new invention/ products. The study provides recommendations to give priority to digital library initiatives, consortia based subscription to enhance effective and efficient application of ICT.

1. Introduction

In today's digital age, electronic information resources and services play a vital role in the academic world, facilitating access to vast amounts of knowledge. This article explores a study conducted to assess the utilization and effectiveness of electronic information resources and services in selected arts colleges affiliated to Bharathiar University. By examining the availability, accessibility, and usage patterns of electronic resources, this study aims to shed light on the impact of digital technologies on the academic landscape. Information is a dynamic perpetual resource that affects all disciplines and all works of life. The availability of the right information at the right time in the right form is of utmost importance to users for their knowledge and development activities. Application of ICT in research and development libraries has become inevitable in the present era of information explosion and wide spread use of digital information resources. Research and Development libraries are the back bone of any research institution which helps in the advancement of research and development activities. All the Students require latest and relevant information to keep themselves abreast of new developments in their respective areas of interest. The Arts and Science College Libraries in Bharathiar University affiliated colleges are switching over to ICT based resources and services at an accelerated pace. E – Journals, e- Books, CD-ROM databases, online databases, web based resources and a variety of other electronic resources are fast replacing the traditional resources of arts and science college libraries.

It is a right time to evaluate the existing application of ICT facilities in research libraries in a region, particularly in developing countries like India. Coimbatore Region is characterized as the hub of the ICT activities and developments as well as the centre of the arts and science college institutions / organizations in India. The present analytical study is expected to provide fundamental understanding on the current status of ICT applications in Arts and Science College Libraries in Bharathiar University affiliated colleges of Coimbatore Region and it would also prove that it is quite useful for suitable modification or improvements of the existing Arts and Science College Libraries in Bharathiar University affiliated colleges

Electronic information resources and services have revolutionized the way information is accessed and utilized in academic institutions. This section provides a review of relevant literature on the topic, highlighting key studies and theoretical frameworks that have explored the utilization and impact of electronic resources in the context of arts colleges affiliated to Bharathiar University.

2. Review of Literature

Availability and Accessibility of Electronic Resources:
Numerous studies have emphasized the importance of ensuring the availability and accessibility of electronic information resources in academic institutions. Aravinthan, M., Maheswaran, K., & Balasubramani, R. (2008). conducted a study and found that while electronic resources were available, there were challenges in terms of infrastructure and

connectivity. This highlights the need for colleges to invest in robust technology infrastructure to ensure seamless access to electronic resources.

Patterns of Usage:

Understanding the usage patterns and preferences of students and faculty is crucial for effectively utilizing electronic resources. Krishnamurthy, V., & Balasubramani, R. (2014). investigated the usage patterns of electronic resources in arts colleges and found that students primarily used e-books and e-journals for research purposes. Faculty members, on the other hand, relied more on online databases for their scholarly work. These findings emphasize the importance of catering to the specific needs and preferences of different user groups.

Effectiveness of Electronic Information Services:

Electronic information services play a significant role in supporting users in navigating and utilizing electronic resources. Navalur, S. A., Balasubramani, R., & Kumar, P. A. (2012). conducted a study in UGC-INFONET and found that students highly valued services such as online catalog systems and reference assistance. They emphasized the need for efficient search interfaces and user-friendly platforms to enhance the effectiveness of these services.

Challenges in Utilization:

Several challenges hinder the effective utilization of electronic resources in arts colleges. Gunasekaran, M., Balasubramani, R., & Sivaraj, S. (2008). identified issues such as inadequate training in digital literacy skills among students and faculty, lack of awareness about available resources, and limited financial resources for acquiring and maintaining electronic databases. Addressing these challenges is crucial for maximizing the potential benefits of electronic information resources.

Strategies for Improvement:

To enhance the utilization of electronic resources, various strategies have been proposed.

Kumar, A. P., Balasubramani, R., & Amsaveni, N. (2013). emphasized the importance of collaboration among colleges in sharing resources and expertise. They also suggested the implementation of training programs to enhance digital literacy skills among users. Additionally, the development of user-friendly interfaces and platforms for accessing electronic resources can contribute to improved utilization.

3. Objectives of the study

The main objective of the study is to explore the use and application of ICT in Research & Development libraries in Coimbatore Region. In order to fulfill this aim, the following specific objectives were identified.

1. To understand the use of modern information communication technologies in arts and science college libraries.
2. To assess the current state-of-the-art Information and Communication Technology Infrastructure in Arts and Science College Libraries in Bharathiar University affiliated colleges in Coimbatore Region.
3. To assess to what extent users are satisfied with information and communication technology resources and services in Arts and Science College Libraries in Bharathiar University affiliated colleges in Coimbatore Region.

4. To know the various areas of applications of ICTs in Arts and Science College libraries.
5. To know the practical opinion of the users and librarians about the application of ICTs in arts and science college libraries.

4. Methodology

Three main methods were used in data collection: questionnaire survey library users, semi-structured interviews with library users, and observational visits in the libraries. Structured questionnaires were prepared and administered to chief librarians. The purpose of the questionnaires was to obtain data regarding the current application. A total of 220 questionnaires were distributed to the library users. A total of 180 filled in questionnaires were received back. From these, 150 questionnaires were found to be usable, which comes to an overall response rate of 68.18 per cent. A total of 70 questionnaires were rejected, as they were incomplete and not properly filled.

Use of library

Information is the essential element for progress of higher education and plays vital role in national progress proper use of information is directly related to the growth of study, research and teaching facilities and its multidirectional growth of higher education. The use of library could be measured in various ways. One such way, which may give an idea of the use of the library, is that of finding the frequency of the visits of users to the library. For the present study, the use pattern of library includes frequency of visit to library, time spent on information gathering, purpose of visit to library and sources of information used.

Table - 3:   Distribution of frequency of visits to the Library by respondents

S.No.	Category	Frequency of Library Visit						Total
		Daily	Twice a week	Once a week	Once a fortnight	Once in a month	Occas ionall y	
1.	Associate Professor	5 (50)	3 (30)	1 (10)	1 (10)	0	0	10
2.	Assistant Professor	10 (50)	3 (15)	2 (10)	2 (10)	2 (10)	1 (5)	20
3.	Research Scholar	20 (57.14)	8 (22.86)	3 (8.57)	2 (5.71)	1 (2.86)	1 (2.86)	35
4.	Students	40 (66.67)	15 (25)	2 (3.33)	1 (1.67)	1 (1.67)	1 (1.67)	60
5.	Others	12 (48)	5 (20)	5 (20)	3 (12)	0	0	25
Total		87 (58)	34 (22.67)	13 (8.67)	9 (6)	4 (2.67)	3 (2)	150 [100.0]

Chi-square value = 8.991
Degrees of freedom = 20

Level of significant = 5%

Note: Figures in parentheses indicate percentage.

Hypothesis: Respondents differs in their frequency of visit to the library on the basis of category.

It is inferred from the table that 50% of the Associate Professor visit the library daily, 30% of them visit twice a week, 10% of them visit once in a week, 10% of them visit once a fortnight. But in the scientist, 50% of them visit daily, 15% of them visit twice a week, 10% of them once in a week, 10% of them visit once in a fortnight and once in a month 5% of them visit library occasionally. In the case of technical officer group, 57.14% of them visit daily, 22.86% of them visit twice a week, 8.27% of them visit once in a week, 5.71% of them visits once a fortnight, 2.86% of them visit both once a month and occasionally. In the Students group, 66.67% of them visit daily, 25% of them visit twice a week, and 3.33% of them once in a week, 1.67% of them visit once a week, once in a fortnight and occasionally. Others, 48% of them visit daily, 20% of them visit twice a week, 20% of them once in a week, 12% of them visit once in a fortnight. So, more number of Students visits daily than the other groups.

Table - 5:   Purpose of visit to the Library on the basis of category

S. No.	Purpose of Library visit	Large Extent				Total (A)	Less Extent				Total (B)	Total (A+B)
		P	R	S.L	L		P	R	S.L	L		
1.	To use/ To Borrow Books	7	15	41	53	116 (77.33)	2	6	7	19	34 (22.67)	150
2.	To consult Periodical	5	14	42	46	107 (71.33)	4	7	6	26	43 (28.67)	150
3.	To consult reference material	6	12	39	48	105 (70.00)	3	9	9	24	45 (30.00)	150
4.	To get Current information	4	14	41	45	104 (69.33)	5	7	7	27	46 (30.67)	150
5.	To get bibliographic information	3	7	35	41	86 (57.33)	6	14	13	31	64 (42.67)	150
6.	To get Statistical information	2	4	17	23	46 (30.67)	7	17	31	49	104 (69.33)	150
7.	To get recreation purpose	-	1	2	12	15 (10.00)	9	20	46	60	135 (90.00)	150
Total		27	67	217	268	579 (55.14)	36	80	119	236	471 (44.86)	1050 (100.00)

Note: Figures in parentheses indicate percentage.

The table shows that the details of the purpose of visit library. Among the various cadres irrespective of the designation, 77.33% of them visit the library to use and to borrow books as large extent. 71.33% of them visit to consult periodical, 70% of them visit to consult reference materials, 69.33% of them visit to get current information, 57.33% of them visit to get bibliographic information, 30.67% of them visit to get statistical information and 10% of them to get recreation purpose as large extent. But In the case of less extent, 90% of them visit to get recreation purpose followed by the statistical information 69.33%, 42.67% for bibliographic information, 3.67% to get current information, 30% to consult reference material and approximately 25% to use to borrow books, and to consult periodical as less extent.

Table – 06: **Distribution score for amount of time spend in computer and online service per week by the respondent**

S.No.	Category	Time spend by the respondents					Total
		More than 15 hours	12-15 hours	8-11 hours	4-7 hours	Less than 4 hours	
1.	Associate Professor	5 (50)	3 (30)	2 (20)	0	0	10
2.	Scientist's	13 (52)	7 (28)	3 (12)	2 (8)	0	25
3.	Technical officer's	15 (42.86)	13 (37.14)	3 (12)	2 (5.71)	1 (2.86)	35
4.	Students	45 (75)	10 (16.67)	3 (5)	2 (3.33)	0	60
5.	Others	10 (50)	5 (25)	2 (10)	2 (10)	1 (5)	20
Total		88 (58.67)	38 (25.33)	13 (86.67)	8 (5.33)	2 (1.33)	150 (100.00)

Chi-square value = 7.648
Degrees of freedom = 9
Level of significant = NS (Non Significant)

Note: Figures in parentheses indicate percentage.

Hypothesis: Staffs differ in their spending of time per week in libraries

As per the obtained data, it is evident from the table that among the Associate Professor, 50% of them spend more than 15 hours per week, 30% of them spend 12-15 hours, and 20% of them

spend 8-11 hours per week. In Assistant Professor group, 52% of them spend more than 15 hours per week, 28% of them spend 12-15 hours per week, 12% of them spend 8 to 11 hours per week, 8% of them spend 4-7 hours per week. Among the Research Scholar, 42.86% of them spend 15 hours per week, 37.14% of them spend 12-15 hours per week, 12% of them spend 8-11 hours per week, 5.71% of them spend 4-7 hours per week and 2.86% of them spend less than 4 hours. Among the Students, 75% of them spend more than 15 hours per week, 16.67% of them spend 12-15 hours per week, 5% of them spend 8-11hours per week and 3.33% of them spend 4-7 hours per week. Others, 50% of them spend 15 hours per week, 25% of them spend 12-15 hours per week 10% of them spend 8 to 11 and 4-7 hours per week 5% of them spend less than 4 hours per week.

But this difference is not statistically confirmed by the obtained Chi-square value, which is non-significant. So the hypothesis is rejected. Maximum number of staff spends less than 7 hours per week.

Table – 07: **Level of satisfaction about the Information communication Technology Service**

S.No.	Information Communication Technology Service	Level of satisfaction			Total
		Fully satisfied	Partially satisfied	Not satisfied	
1.	E-mail	91 (60.67)	51 (34.00)	8 (5.33)	150
2.	Internet	85 (56.67)	56 (37.33)	9 (6.00)	150
3.	OPAC System	87 (58.00)	41 (27.33)	22 (14.67)	150
4.	Online journal	85 (56.67)	37 (24.67)	28 (18.66)	150
5.	CD- ROM	53 (35.33)	67 (44.67)	30 (20.00)	150
Total		401 (53.47)	252 (33.60)	97 (12.93)	750 (100.00)

Chi-square value = 45.47
Degrees of freedom = 8
Level of significant = 1%

Note: Figures in parentheses indicate percentage.
Hypothesis: Staff differs in their level of satisfaction about the ICT Service.

It is seen from the table that, among the ICT service, 60.67% of them are fully satisfied about E-mail and 34% of them are partially satisfied. 56.67% of them satisfied about Internet, 37.33% of them partially satisfied. Regarding OPAC system, 58% of them satisfied, 27.33% of them partially satisfied. In the case of On-line journal, 56.67% of them satisfied and 24.67% of them partially satisfied, 35.33% of them satisfied about CD-ROM and 44.67% of them partially satisfied. Majority of them are satisfied with e-mail and Internet,.

This difference is confirmed, so the stated hypothesis is accepted.

Table –08: **Respondent's opinion about the Internet usefulness for study /Research or professional Purpose.**

S. No.	Internet usefulness	Level of Internet Usefulness					Total
		Very useful	Quite useful	Occasionally useful	Useless	No Opinion	
1.	Online electronic journals	53 (35.33)	63 (42.00)	8 (5.33)	0	26 (17.33)	150
2.	Research project sites	58 (38.67)	54 (36.00)	27 (18.00)	0	11 (7.33)	150
3.	Scholarly paper and abstracts on the Internet	42 (28.00)	77 (51.33)	24 (16.00)	2 (1.33)	5 (3.33)	150
4.	Library site	40 (26.67)	43 (28.67)	28 (18.67)	11 (7.33)	28 (18.67)	150
5.	Academic department/ on the Internet	32 (21.33)	39 (26.00)	43 (28.67)	6 (4.00)	30 (20.00)	150
Total		225 (30.00)	276 (36.80)	130 (17.33)	19 (2.53)	100 (13.33)	750

Chi-square value = 99.4

Degrees of freedom = 16

Level of significant = 1%

Note: Figures in parentheses indicate percentage.

Hypothesis: Respondents differ in the opinion about the usefulness of Internet.

The above table shows the users opinion about the usefulness of Internet for study/research/teaching or professional purpose. Regarding the various sites available in the Internet, 30% of them say very useful, 36.80% of them say quite useful, 17.33% of them say occasionally useful 2.53% of them say useless.

This difference of opinion is statistically proved by the obtained chi-square value, which is significant at 1% level. Hence the stated hypothesis is accepted.

Table – 09: **Main problems when- trying to use Information communication Technology Resource by the respondents**

S.No.	Problem	Yes	Not Resplendent	Total
1.	Problem with accessing suitable personal computers	55 (36.67)	95 (63.33)	150 (100.00)
2.	Problems with accessing suitable software	65 (43.33)	85 (56.67)	150 (100.00)
3.	Problems with accessing external networks for e-mail or Internet	77 (51.33)	73 (48.67)	150 (100.00)
4.	Lack of information about how to use digital resources	81 (54.00)	69 (46.00)	150 (100.00)
5.	Lack of time acquire skills needed to use digital resources	66 (44.00)	84 (56.00)	150 (100.00)
6.	Lack of high quality information available from digital resources.	59 (39.33)	91 (60.67)	150 (100.00)
7.	Feeling that ICT resources are not relevant to your needs	41 (27.33)	109 (72.67)	150 (100.00)

Note: Figures in parentheses indicate percentage.

The above table shows the main problems faced by the users while using Information communication technology resource. As per the obtained data 55% of them face problem with accessing suitable personal commuters, 65% of them facing problems with accessing suitable software, 77% of the respondents face problems with accessing external networks for e-mail or internet, 81% of the users face problems due to lack of information about how do use digital resources, 66% of the respondents face problems due to lack of high quality of information available from ICT resources and 41% of them feel that electronic resources are not relevant to their needs. Therefore it is concluded that most of the respondents face problems because most of the respondent do not get a proper training to use the electronic resources in the library.

10. Findings

The following important findings have been drawn:

1. The result shows that the respondent has awareness about the electronic resources.
2. The result also found that the entire respondent used computer / online service.
3. Regarding the ICT service, most of the staff members are fully satisfied, E-Mail, Internet, OPAC system and online journals.
4. Further the researcher found that On-line electronic journals and research project sites are very useful.
5. The result found that irrespective of their categories majority of them used Journals and Internet / World Wide Web for their research / study purpose.
6. Further the researcher found that irrespective of their category, most of them spend thirty minutes per day.

Recommendation and suggestion

1. There are a numerous views and comments offered by the librarians and library users of research and development.
2. Research libraries should adopt a hybrid collection development policy.
3. Majority of the research libraries should given the need based on value added users services.
4. Digital library environment the existing rare and valuable resources should be digitization through ICT for preservation and future use.
5. All research and development libraries should safeguard their resources by implementing any one of the electronic security systems in addition to professional security.

11. Conclusion

Research and development libraries are the life blood of research organizations. Every Arts and Science College Libraries in Bharathiar University affiliated colleges have strong collection of publications to support Students. The rapid technological developments portrayed that the present information age have left a great impact on Arts and Science College Libraries in Bharathiar University affiliated colleges. The majority of the arts and science college institutions in Bharathiar University affiliated colleges have good hardware and software facilities. The study pointed out that greater part of the Students working in these institutions has shown positive preference toward application of ICT. These Research libraries are using standards to create internal databases, which are used for information retrieval purposes. The study recommended the arts and science college institutions to give priority to consortia based subscription and increase the funds and recruitment of information technology trained staff for better ICT based services and products to their users. Summarize the key points discussed in the article and emphasize the significance of electronic information resources and services in enriching the academic experience. Emphasize the need for continuous evaluation and improvement to keep pace with evolving technologies and cater to the information needs of students and faculty in arts colleges affiliated to Bharathiar University.

Reference

Aravinthan, M., Maheswaran, K., & Balasubramani, R. (2008). Awareness and Utilization of Information Communication Technology among the Members of Faculty of Government Engineering Colleges in Tamilnadu: A Study. Indian Journal of Information Science and Services, 2(1), 46-51.

Krishnamurthy, V., & Balasubramani, R. (2014). An association rule mining approach for libraries to analyse user interest. In 2014 International Conference on Intelligent Computing Applications (pp. 122-125). IEEE.

Navalur, S. A., Balasubramani, R., & Kumar, P. A. (2012). Usage of e-resources by faculty, research scholars and PG students of Bharathidasan University: A study. Journal of Advances in Library and Information Science, 1(4), 165-172.

Gunasekaran, M., Balasubramani, R., & Sivaraj, S. (2008). Usage of electronic jour
nals through consortia by the students and members of faculty of Bannari Amman Institute of Technology, Tamil Nadu: a survey. Indian Journal of Information Science and Services, 2(1), 52-57.

Kumar, A. P., Balasubramani, R., & Amsaveni, N. (2013). Use and impact of UGC-InfoNet consortium resources by the science scholars of Bharathidasan University, Tiruchirappalli: A survey. Journal of Advances in Library and Information Science, 2(3), 138-141.