Use of Digital Resources by the Faculty Members of Engineering Colleges in Tamil Nadu, India: A Survey

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Abstract

Availability of digital resources in a library plays a vital role in facilitating access to required information to the user in an easy and efficient manner. Now-a-days the digital resources like online journals, e-books, CD-ROM databases and Internet are slowly replacing the usages of print media. This study seeks to examine the use of digital resources by the Faculty of Engineering Colleges in Tamil Nadu, India. A sample of 120 faculty members was selected randomly and was sent the questionnaire. Out of 120 questionnaires, only 82 questionnaires were found to be eligible to this study. This paper covers the objectives of using digital resources, factors, motivating the user to access the digital resources, online resource search techniques, preference of text format, online resource access problems and suggestion of the respondents to improve the library services.

Keywords: Electronic Journals, Engineering Faculty, Digital Resources, Motivation, Search Technique.

Introduction

The world has changed radically with the emergence of the Internet. This has made the process of organizing and searching digital collections a critical international need. With the advent of Internet, it has become very easy to access the documents online and as a result there has been a revolutionary shift from print to electronic resources. The Internet and online resources are attractive to users because of the convenience and speed. Hence, the success of a library has become largely dependent on its ability to develop robust infrastructure and sustained support, and also manpower training and development through which the online contents would become amenable to electronic search through the dedicated search engine on their websites.

Significance of the Study

Most of the science and technology libraries have changed the contemporary outlook towards functions and services. The environment is rapidly changing towards an electronic one. Libraries have traditionally been playing an important role in the learning and teaching activities of Universities: teachers and students would come into the library to find books and journals. However, with an increasing amount of electronic resources available the library, it is easy to see how both the learner and the teacher might bypass the library altogether (**Secker[1], 2004**). This article focuses on the usage of online resources such as e-books, e-journals, e-databases, e-Research reports etc. by the Faculty of Engineering Institutions.

The Library provides access to full-text electronic journals under IEEE/IEL, ASCE, ACM, Science Direct, ASME, ASTM Standards, ASTM Journals, EBSCO, Emerald Management, etc. The faculty can utilize them for teaching-learning purposes. Hence, it is necessary to conduct a serious study to determine whether the online resources are satisfactorily used by the faculty for academic activities and how far these online resources have influenced the academic efficiency of the target users.

Review of Related Literature

Review of the related literature is the key focus of any research. It enables one to be aware of the past and current trends in any particular area of research. The researcher must have an adequate knowledge of the work that has already been done in the area of his/her present study. Here, the researchers have reviewed those studies which are similar to the present study and which describe an overall review of studies conducted in international as well as national level in a chronological order.

Mulla[2] (2011) has studied the Use of Electronic Resources by Faculty Members in HKBK College of Engineering: A Survey in Bangalore and found that the majority of the faculty visited once a week the electronic library; 91.67% of respondents use Internet; 50.00% respondents use CDROMs; 70.00% of respondents stated access to current information is a benefit of using electronic resources ; 35% of respondents do not have enough time to access to the electronics resources and 31.67% faculty members indicate lack of training to use the electronic resources satisfactorily.

Haneefa[3] (2007) has studied the Information and Communication Technologies in Special Libraries in Kerala and found 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 level because of the lack of funds, lack of infrastructure, and lack of skilled professionals to establish an automation of all library management activities and application of ICT.

Asemi[4] (2007) has made a survey and the use of digital resources in the libraries of Isfahan University of Medical Sciences, Iran and found that 70 percent of students were aware of digital resources, but only 69 percent of them have used them; 62 percent were aware of offline databases, whereas only about 19 percent used them through the Central Library LAN network. About 70 percent were aware of online databases, accessible via the Central Library website and about 53 percent of respondents have used them. Users are faced with problems like low speed connectivity and shortage of hardware facilities.

Al-Ansari[5] (2006) has conducted a study of Internet use by the faculty members of Kuwait University and found that the majority has used the computer and Internet for more than five years. They use the Internet mostly for, e-mails, search engines, and WWW resources for communication, research, and publication.

Atilgan and Bayram[6] (2006) have conducted a survey about the development of the digital library system in Ankara Universities, Turkey. As a research tool, this survey was expected to provide information that would help in two directions: first, in making a decision as to how many of these e-databases the library should subscribe; second, in analyzing the level of awareness among the faculty members along with the frequency of their use of the digital library.

Rajeev Kumar and Amritpal Kaur[7](2005) have carried out a study about the usage of Internet and related issues among the teachers and students of engineering colleges of Punjab, India and found that the Internet has become a vital instrument for teaching, research and learning processes of the respondents. In order to make the Internet more beneficial, the library staff should organize and classify the information on a website in such a way that the users are able to find out easily the information they need for their studies and research purposes. The library services supplemented by Internet services can prove a great boon to the users in getting the right information at the right time.

Objectives of the Study

The study was conducted

- ▪ To find out the objectives of the faculty members using online digital resources.
- ▪ To ascertain the factors inducing the faculty to use online digital resources.

- To find out what type of online resources are preferred by the faculty for teaching and research.

- To find out the search techniques of the faculty.

- To find out the reading preferences of format files.

- To find out the difficulties faced by the faculty members while using online resources.

Methodology

The faculty of the various Engineering colleges in TamilNadu represented the target population for this study. The questionnaire method has been employed to collect the data for the present study. The questionnaire was constructed based on the following elements; purpose of usage, motivating factor, search techniques, reading preferences, personal problems and suggestions.

Data Collection Procedure

Samples of 120 faculty members were selected randomly. A structured questionnaire was designed for collecting data. A total of 91 filled-in questionnaires were received from them. Of these, 82 questionnaires were found to be usable, and 9 questionnaires were rejected as they were incomplete and not properly filled in. The response rate was 68.33%. The investigator selected the entire set of completed questionnaires for data analysis.

Data Analysis and Interpretation

The data collected through completed questionnaires were organized and tabulated by using statistical methods and percentages. After the data collection, the next work is data analysis and interpretation of results.

Purpose of Usage

The respondents were asked to tick the usage purpose of online resources. Frequencies and percentages of usage are presented in Table 1 and Fig.1. It was found that 70(85.36%) respondents use the online resources for preparing study materials, class exercises and curriculum plans for students; 28(34.14%) respondents distribute the instructional materials electronically; 45(54.87%) respondents download software and tools for research project implementation; 62(75.60%) respondents use online resources for research and literature survey; 28(34.14%) respondents locate, collect use and analyze the data using the Internet; 40(48.78%) respondents use the Internet to prepare manuscripts and research proposals; 55(67.07%) respondents use the

Internet for paper submission to conferences and journals; 7(8.53%) respondents use the net for web publishing and 14 (17.07%) respondents use the Internet for online tests.

Table 1: Purpose of Usage

| Purpose	Number of Respondents	Percentage (%)
Prepare Study Materials, Class Exercises and Curriculum Plans	70	85.36
Distribute Instructional Materials Electronically	28	34.14
Download Software and Tools for Research Project Implementation	45	54.87
Research and Literature Survey	62	75.60
Locate, Collect and Analyze Data Using the Internet	28	34.14
Prepare Manuscripts and Research Proposals	40	48.78
Paper Submission for Conferences and Journals	55	67.07
Web Publishing	7	8.53
Online Test	14	17.07
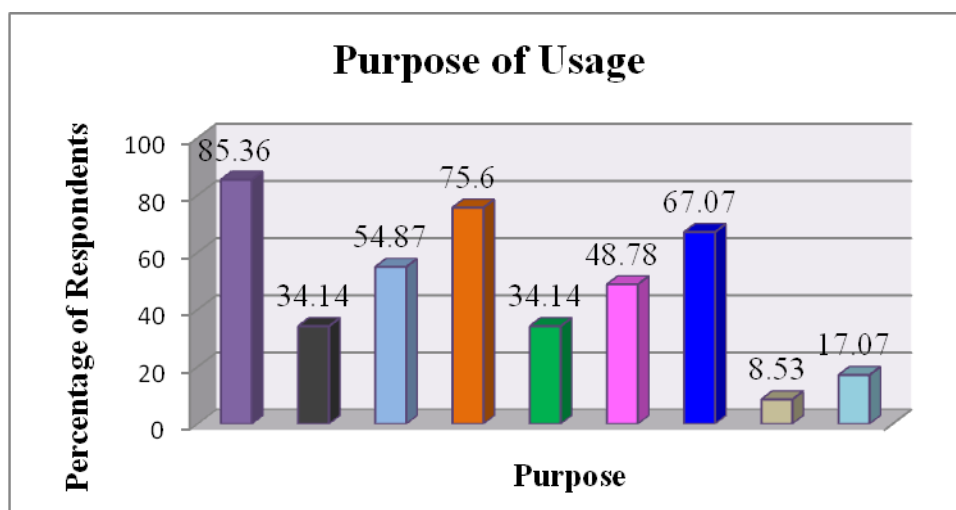
Figure 1 Purpose of Usage

Motivating Factor

Respondents were asked to indicate the motivating factors which led them to use the online resources. Table 2 and Fig.2 show that 64 (78.04%) respondents use to enhance teaching; 60 (73.17%) respondents use to enhance research; 50 (60.97%) respondents use to professional development and lifelong learning and 33 (40.24%) respondents use to enhance communication purposes.

Table 2: Motivating Factors

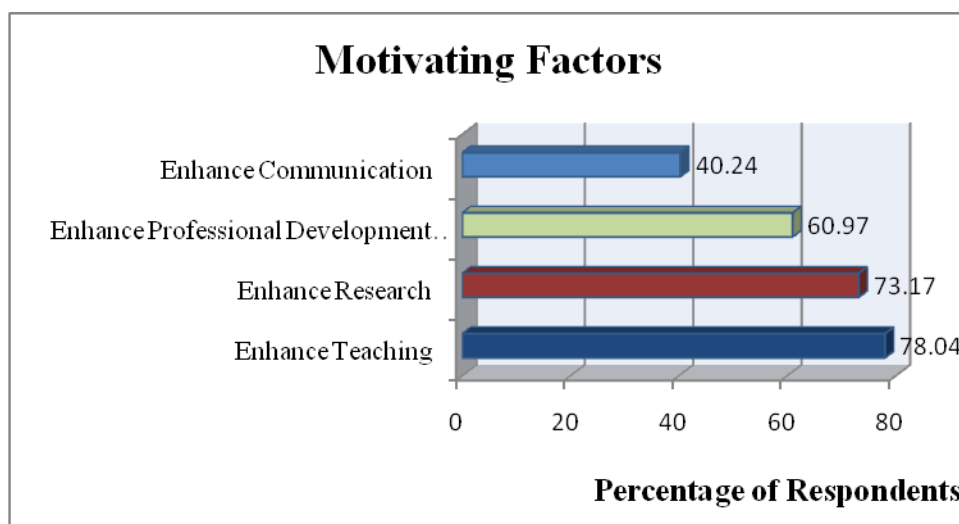| Factors	Number of Respondents	Percentage (%)
Enhance Teaching	64	78.04
Enhance Research	60	73.17
Enhance Professional Development and Lifelong Learning	50	60.97
Enhance Communication	33	40.24

Figure 2 Motivating Factors

Search Technique

Table 3 and Fig.3 clearly show that 58 (70.73%) respondents make their searching of online resources through general search engine like Google, Yahoo; 6 (7.32%) respondents make their searching through a specific journal's website; 17 (20.73%) respondents make their

searching through a multi-journal search website with links to full text; 1 (1.22%) respondent make the searching through the local library's reference room or stacks and nobody make their searching through an online citation index (Web of Science, SciFinder). Thus it indicates that a large percentage of faculty members use a general search engine like Google, Yahoo regularly.

Table 3: Search Techniques

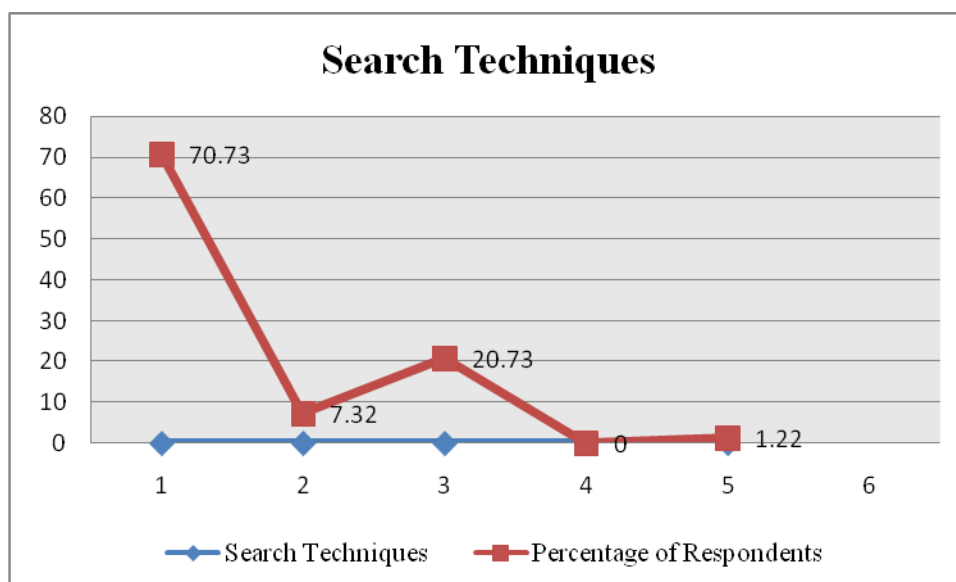| Search Techniques	Number of respondents	Percentage (%)
A General-Purpose Search Engine (e.g., Google, Yahoo)	58	70.73
A Specific Journal's Website	6	7.32
A Multi-Journal Search Website With Links to Full Text	17	20.73
An Online Citation Index (e.g., Web of Science, SciFinder)	0	0
Local Library's Reference Room or Stacks	1	1.22
Total	**82**	**100.00**

Figure 3 Searching Techniques

Reading Preference

Table 4 and Fig.4 show that 43 (52.44%) respondents prefer to read the online resources in full text on the screen in PDF format first; 6 (7.32%) respondents prefer to read it in full text on the screen in HTML format first and 33 (40.24%) respondents prefer to take print outs and read rather than reading from the screen.

Table 4: Reading Preference

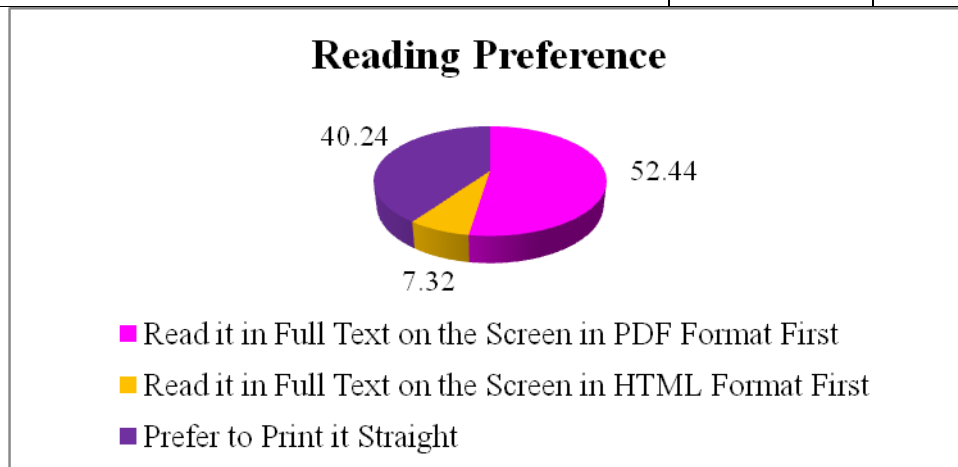| Format	Number of Respondents	Percentage (%)
Read it in Full Text on the Screen in PDF Format First	43	52.44
Read it in Full Text on the Screen in HTML Format First	6	7.32
Prefer to Print it Straight	33	40.24
Total	**82**	**100.00**

Figure 4 Reading Preference

Use of Online Resources

Table 5 and Fig.5 show that 44 (53.65%) respondents use e-books; 63 (76.82%) respondents use articles in their entirety; 59 (71.95%) respondents use abstract of articles; 9 (10.97%) respondents use standards; 16 (19.51%) respondents use patents; 24 (29.26%) respondents use formulae; 32 (39.02%) respondents use models/designs and 49 (59.75%) respondents use research reports.

Table 5: Use of Online Resources

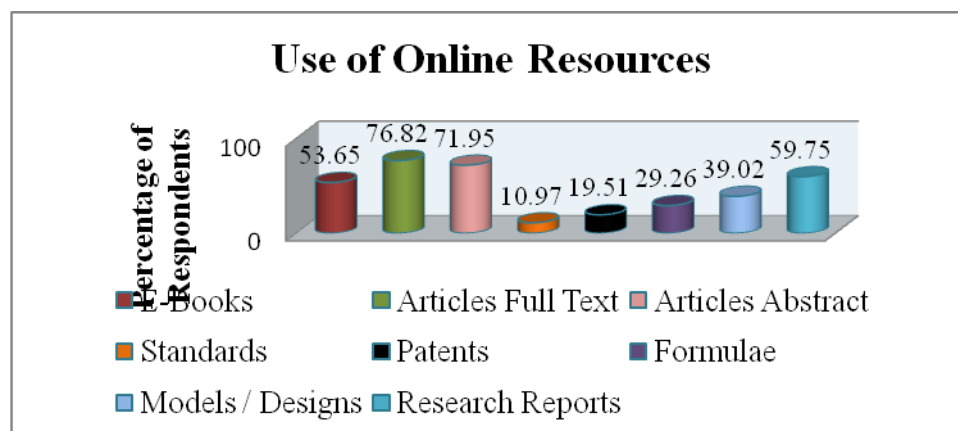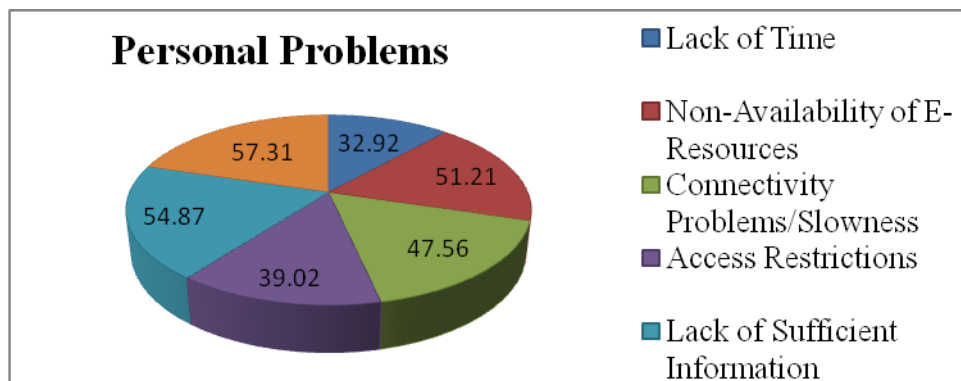| Type of Online Resources	Number of Respondents	Percentage (%)
E-Books	44	53.65
Articles Full Text	63	76.82
Articles Abstract	59	71.95
Standards	09	10.97
Patents	16	19.51
Formulae	24	29.26
Models / Designs	32	39.02
Research Reports	49	59.75

Figure 5 Use of Online Resources

Personal Problems

Table 6 and Fig.6 clearly indicate the problems faced by the respondents. Twenty-seven (32.92%) respondents felt lack of time; 42 (51.21%) respondents felt non-availability of e-resources; 39 (47.56%) respondents felt connectivity problems/slowness; 32 (39.02%) respondents felt access restrictions; 45 (54.87%) respondents felt lack of sufficient information and 47 (57.31%) respondents felt lack of instructions.

Table 6: Personal Problems

Problems	Number of Respondents	Percentage (%)
Lack of Time	27	32.92
Non-Availability of E-Resources	42	51.21
Connectivity Problems/Slowness	39	47.56
Access Restrictions	32	39.02
Lack of Sufficient Information	45	54.87
Lack of Instructions	47	57.31

Figure 6 Personal Problems

Suggestions

Respondents were asked to suggest improving the usage of online resources. Table 7 and Fig.7 show that 41 (50.00%) respondents suggested to provide workshops and classes; 38 (46.34%) respondents suggested to provide them a web-based guided tour; 36 (43.90%) respondents suggested to introduce written instructions for subject specific resources and 67 (81.70%) respondents suggested to inform the faculty frequently of what is available in the library.

Table 7: Suggestions

Suggestions	Number of Respondents	Percentage (%)
Provide Workshops and Classes	41	50.00
Provide Web-based Guided Tour	38	46.34

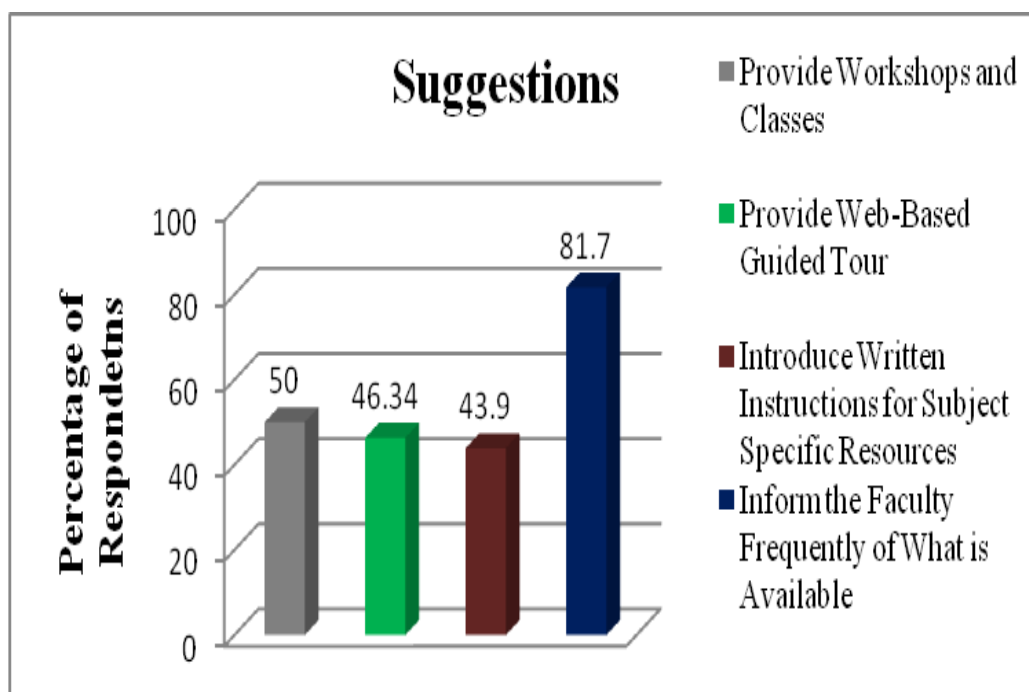|		
Introduce Written Instructions for Subject Specific Resources	36	43.90
Inform the Faculty Frequently of What is Available	67	81.70

Figure 7 Suggestions

Findings and Conclusion

Findings

The major findings of the present survey are:

- Table 1 represents that most of the faculty members, i.e. 70 (85.36%) use online resources for preparing study materials, class exercises and curriculum plans for students and least 7 (8.53%) use it for web publishing.
- It is observed from the table 2 that most of the faculty members, i.e. 64 (78.04%) use online resources to enhance teaching, followed by 33 (40.24%) who use it to enhance their communication capabilities.

- A majority of the faculty members, i.e. 58 (70.73%) begin their search for online resources through Google and Yahoo and there is no response through online citation index (Web of science, SciFinder) (Table 3).

- From table 4, it is clearly known that 43 (52.44%) faculty members prefer to reading of online resources in PDF format on the screen, followed by 6 (7.32%) preferring the HTML format.

- Table 5, clearly indicates that the majority, i.e. 63 (76.82%) faculty members use online resources of full text journal articles for their research and teaching, followed by 49 (59.75%) who use it for research reports.

- Table 6, clearly shows that more than half, i.e. 47 (57.31%) faculty members report the lack of instructions as how to use the online resources, followed by 42 (51.21%) who report the non-availability of e-resources.

- Table 7, shows the suggestions from the majority, i.e. 67 (81.70%) faculty members that they need to be informed regularly about what is available in the library regarding the new arrival of books and journal information through e-mail, notice and library website. The Faculty members feel that this kind of information will help to improve their usage of online resources.

Conclusion

The present study seeks to examine the usage of online resources by the Faculty Members of Engineering Colleges in TamilNadu, India. The survey reveals that the majority of the faculty members are using the online resources for research and teaching. From this survey, the investigator was able to find out that most of the faculty members use full text articles as the first source of information. The survey also reveals that most of the faculty members begin their searching of online resources through dedicated search engines i.e., Google and Yahoo. Most of the faculty members prefer the type of PDF format for reading on the screen. They have reported the lack of instructions as how to use the online resources and suggested that they can be informed regularly about what is available in the library regarding the new arrival of books and journal information, through e-mail, notice and library website.

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