ABSTRACT

The developments in computer technology have drastically changed the way in which data is collected, retrieved and disseminated. As an impact of these technologies, manual information retrieval systems have been transformed into automated retrieval systems and have emerged as an excellent tool for information retrieval. It concerns all the activities related to the organization, processing, and accessing of information in all forms and formats. It is designed to enable searchers to find relevant information from an organized collection of information to satisfy their specific needs. Furthermore, the introduction of Information and Communication Technologies (ICT) in information processing techniques has completely changed the concept of information retrieval from automated to online information retrieval systems. This transition from automation to online systems has greatly affected the use of library resources.

Furthermore, the developments in information and communication technologies have expanded the scope of information retrieval systems from automated retrieval systems to online retrieval systems. Online information retrieval systems had started to emerge with the initiation of computer applications in information handling and processing, and in the past few decades, these systems have undergone several changes in their searching and retrieval capabilities. The internet and World Wide Web have made it available online anywhere at anytime. These are mainly designed to retrieve documents or information from remote database(s) that may contain abstracts or full texts of documents, such as articles, references sources, legal documents, statistics and so on, as well as multimedia information (Chowdury, 2010). Thus, in recent years, the online Information systems have become an important tool of information access and retrieval and are considered as a significant source of information in academics.

Many online databases began as printed indexes to the literature of specialized subject domains. The early databases were in the form of electronic indexes to scientific and technical literature in medicine. Now, there are thousands of online databases that are produced by a number of government and private organizations. Learned societies and professional organizations have likewise been active in the production of databases (Alberico & Snow, 1985). MEDLINE was the first online dial-up service, introduced in 1972 and was offered by the online service providers,
Abstract

Dialog (Lockheed) and ORBIT System Development Corporations (SDC). Now, the searchers can access these databases either through database producers, or online service providers/ vendors (Chowdhury & Chowdhury, 2007). Furthermore, advances in computer memory allowed construction of very large databases, which enable fast retrieval of information. Along with developments in national and international telecommunication technologies and networking technologies have facilitated real-time, interactive, online global access to these databases to a large number of users (Gash, 2000). Since then, online databases are continuously growing in number and providing different modes to access a multitude of information sources.

The widespread development and usage of online databases have a profound impact on academic and research activities. These are the organized collection of information with which users can easily access their information either on-site or remotely. Online Databases comprise a wide range of information sources including electronic journals, e-books, electronic thesis, and other electronic sources. Gash(2000) acknowledged that the electronic databases are of central importance to anyone who performs literature searches as they cover a wide range of subject areas providing access to millions of logically arranged references of different types of literature such as journals, books, reports, conference papers, patents, standards, theses and dissertations and government publications, etc.

Today, libraries are continuously transforming their collection and services on the one side, but on the other side, they are facing problems of shrinking budget and increasing cost of information resources (Thanuskodi, 2013). Therefore, to overcome these problems libraries are now looking for online databases as a means of acquiring a wide range of information sources at an average cost. Furthermore, to justify the amount spent on acquisition and provision of online database services in libraries, it becomes necessary to determine the use of these significant sources of information. In addition, the planning for budget also depends on the understanding of how information resources are used by the patrons. Hence, the present study attempts to obtain the data regarding the use of online databases in select universities to justify the expenditure on acquisition and maintenance of online databases.
NEED AND SIGNIFICANCE OF THE STUDY

Need

In the last few decades, online databases have become an important information source for research and learning, and now these are considered as an essential component of the online collection of any library. Online Databases are an excellent tool for online information searching, which are widely used in various fields of education, particularly in the Science and Technology. Therefore, for optimum use of these resources, the proper assessment of online databases and its services becomes requisite. However, several studies have been conducted to measure the use and impact of online databases in science-related fields, and these have yielded positive results. Hence, this fact makes it requisite to identify the importance and use of online databases in the field of Social Sciences and Arts.

Besides, libraries are nowadays spending a huge amount of money on providing access to online resources to their users. Thus, this impel to assess the use and value of such resources and to identify and understand the databases that are in use, as the cost of the information sources can only be justified by its use. This study will also provide recommendations to improve the usage of these valuable resources. Furthermore, there is no published study found on the topic of investigation with similar objectives to identify the use of online databases. Therefore, the present study will be helpful in providing a better understanding on use of online databases subscribed by the select university libraries.

Significance

The study aims to identify the importance and use of online databases in the fields of Social Sciences and Arts. The results of the study will help to:

- Make optimum use of Online Databases in the field of Social Sciences and Arts.
- Identify the issues that restrict users in making use of online database services.
- Improve library services in terms of reviewing the existing database services in libraries.

Therefore, the findings of the study will be helpful in improving organization and provision of online databases in libraries, enhancing the awareness and use of online databases, especially in the field of Social Sciences and Arts.
STATEMENT OF THE PROBLEM

The problem selected for the present study is entitled “Use of Online Databases in the faculties of Social Sciences and Arts in Central Universities of Delhi and Uttar Pradesh: A Comparative Study”. The problem attempts to understand the use of online databases in the Faculties of Social Sciences and Arts in Central Universities of Delhi and UP.

OBJECTIVES

The objectives of the study are:

i. To assess the awareness of online databases among the users in the faculties of Social Sciences and Arts of select central universities.

ii. To study the process of collection and management of online database among the libraries of the surveyed universities in Delhi and UP.

iii. To determine the library facilities and support services for online database use in the libraries of the select universities.

iv. To compare the use of online databases among the users of the faculties of Social Sciences and Arts in the central universities under study.

v. To assess the impact of online databases on the users in the faculties of Social Sciences and Arts of the universities in Delhi and UP.

vi. To determine the barriers in the optimum usage of online databases among the users of the select universities under study.

vii. To identify the level of satisfaction regarding the use of online databases, its collection and services among the users of the faculties of Social Sciences and Arts in the select libraries in Delhi and UP.

HYPOTHESES

The study addresses the following hypotheses:

i. There is significant difference in the level of awareness of online databases among users (Faculty Members, Research Scholars and Postgraduates) from faculties of Social Sciences and Arts in the Central universities of Delhi and U.P.

ii. There exists significant difference in the collection of online databases among the libraries of select universities in Delhi and UP.

iii. Impact of online databases is higher among the users of the faculties of Social Sciences and Arts in the central universities of Delhi as compared
to users of the faculties of Social Sciences and Arts in the central universities of UP.

iv. There exists a significant difference in the purposes of using online databases among the users of central university libraries in Delhi and UP.

v. There exists significant difference in the satisfaction level with respect to the use of online databases among the users of the faculties of the Social Sciences and Arts in the central universities of Delhi and U.P.

SCOPE AND LIMITATIONS OF THE STUDY

Libraries today are adopting different technology enabled services for providing online sources and services to their users in a more efficient way. Availability of online resources has added new dimensions in modern library services. Therefore, in the present study an attempt has been made to carry out in-depth study to gauge the use of online databases in select universities.

Scope

There exist seven central universities in Delhi and UP. It has been observed that the best input regarding the use of online databases could have been collected from those universities, which have higher grade in academics and research and are having proper infrastructure to provide online database services. After thorough investigation, the four prominent central universities have been selected for the study. Thus, the present study includes the four central universities of Delhi and UP, viz. Jawaharlal Nehru University (JNU), Delhi, University of Delhi (DU), Delhi, Aligarh Muslim University (AMU), Aligarh and Banaras Hindu University (BHU), Varanasi. The target population for the present study included librarians and users of online databases (Faculty Members, Research Scholars and Postgraduates) from the faculties of the Social Sciences and Arts among the select central universities in Delhi and UP.

Limitations

The major limitations of the study are as follows:

- The study was limited to the faculties of Social Sciences and Arts in the four central universities of Delhi and UP, i.e. DU, JNU, AMU and BHU. These are the oldest and established universities of Delhi and UP and are renowned for its education system in terms of research and teaching.
Abstract

- The databases acquired through UGC consortia and other sources by the libraries have been covered in the study, while other online databases, such as OPAC and Open access online databases have not been included in the study.
- The Faculties of the Social Sciences and Arts of select universities have been considered as a unit for the study. As, the data collected from the Faculties of Social Sciences and Arts from all the universities under study observed negligible differences in the responses, so the investigator decided to merge the data of both the faculties as a single unit and a comparative study at state level (Delhi and UP) has been undertaken. In addition, the users of the faculties of Social Sciences and Arts were using the same online databases for their requirements. This is also a reason that the investigator preferred to conduct the research among the users of Social Sciences and Arts in central universities of Delhi and UP rather than the two faculties.
- There is disparity in the distribution of subjects in the various faculties and schools of the universities under study. The investigator has not ventured into the different subjects and there location in either of the subjects. For the purpose of this investigation, the subjects that constituted the departments/schools have been considered as they existed under the faculties of Social Sciences and Arts in the universities under study. In JNU, the schools that constituted the subjects that are generally covered by the rest of the universities have been selected by the researcher based on the understanding developed by the existing literature and practice within other university systems in the country. The schools considered in this study includes Schools of School of Language, Literature and Culture, School of International Studies and School of Social Sciences.

METHODOLOGY

In order to accomplish the objectives and to collect the relevant data, the investigator has chosen survey method to determine the extent of use of online databases by the users of select libraries and services provided by the concerned libraries to their users. The methodology adopted for collection and analysis of data regarding the use and services of online databases in select university libraries is divided into the following sections:
Abstract

Document Review

An exhaustive survey of related literature was undertaken before starting the work for proper understanding and orientation of the research work. The investigator has consulted various primary and secondary sources for the study. The data relevant for the research work has been collected from both printed and electronic sources of information and these are categorized as:

(a) Primary Sources: Scholarly Journals, Theses, Annual Reports, Websites of the concerned libraries.

(b) Secondary Sources: Encyclopedias, Indexing & Abstracting Journals, Magazines, Textbooks, Online resources, Dictionaries, Digital libraries, Brochures.

Literature Survey

A thorough search is made for related materials in different types of information sources, i.e. primary and secondary sources. The documents consulted for the study mainly includes journals, conference proceedings and books.

Data Collection Methods

Several techniques are available for collecting relevant and authentic data. Being empirical in nature, the study is conducted using survey method constituting of two structured questionnaires. Questionnaires were administered to a sample population in order to know their opinions and attitudes. For sample selection, the investigator used quota sampling and convenience sampling to collect data from a large sized population. Thereafter inferences were drawn from the responses of the representative sample of the total population.

QUESTIONNAIRE

Questionnaires were prepared keeping in mind the objectives and hypotheses proposed for the study.

- Questionnaire Design

As discussed, the investigator has designed the questionnaires keeping in mind the objectives and hypothesis of the study. Individual statements of the questionnaire were formulated using the related literature reviewed and the research objectives of the study. The queries made through questionnaires are formed in such a way that the relationship of one question to another is readily apparent to the respondent. Depending upon the need of the questions, the questionnaires included various types
of questions such as dichotomous (Yes or No), multiple-choice and Likert five point and three point scale. To collect the necessary data for the study, the investigator designed two sets of questionnaires, one for the librarians and another for the users of the concerned libraries.

The questionnaire for the librarians was framed to take librarians’ opinion on facilities that facilitated the use of online databases and on other issues associated with it. It consists of a number of questions arranged in a definite order and style. The questions covered in the questionnaire are divided under the following heads:

- Collection of Online Databases
- Budget Allocated
- Collection Development
- Acquisition and Access
- Access and Usage
- Problems Related to Online Databases
- Facilities Provided by the Libraries
- Support Services
- Satisfaction and Training regarding the Use of Online Databases

The questionnaire designed for users is also based on the structural pattern covering various aspects such as:

- Awareness
- Use of Online Databases
- Search Process
- Features of Online Databases
- Impact of Online Databases
- Library Facilities and Support
- Problems and Satisfaction

Questionnaires thus designed, was subjected to the pilot testing to check the validity and relevance of the questions included in the questionnaire. After that, questionnaires were redesigned and administered for data collection

**USAGE STATISTICS**

The study attempts to acquire the necessary statistics from the respective libraries to assess the use of databases in the libraries of Delhi and UP. All the libraries under study have subscribed to online databases under the UGC- INFONET
Abstract

Programme. The investigator has collected all the data required for the years 2013 and 2014 from the three libraries, i.e., AMU, BHU and JNU. A variation is found in the available number of databases and the databases pertain to a broader subject coverage, it was difficult to use the databases discipline wise, i.e. the Social sciences and Arts. So, the common databases having the desired subject coverage have been identified to compare the most used databases for the study.

Pilot Survey

Pilot study was conducted to test the validity of the questionnaire designed for the data collection. It helps to ensure the conceptual clarity of various aspects covered in the questionnaire, standardization of questions, simplicity of language used and also to know drawbacks, defects, ambiguities, if any that exists in the questions. This pre-test was conducted to determine whether the questions asked generated the data required for the study. Both the questionnaires prepared for librarians and users were administered among the users in the Central University of Himachal Pradesh as part of the pilot study during the month of September 2012. Questionnaires were distributed to the librarian and selected 47 research scholars and postgraduate students registered in the School of Life Sciences and Mathematics and School of Computer & Information Science of Central University of Himachal Pradesh

Population and Selection of Sample

In order to achieve the objective of the study mainly two variables were taken for detailed analysis, i.e. Librarians and Library users. The population from which a sample was drawn included faculty members, registered research scholars (Ph.D. and M.Phil.) and postgraduates from the faculties of the Social Sciences and Arts at DU, JNU, AMU and BHU.

As far as the selection of respondents among the users were concerned, it was not possible to collect data by taking responses from each category of the population. Therefore, the investigator used the quota sampling technique with the combination of convenience sampling. For sampling, the total population is first divided into three groups based on the academic status, viz., Faculty Members, Research Scholars and Postgraduate students. Then, in each quota, a number of questionnaires were distributed to a sample population selected through convenience sampling until each quota was filled. Special care was taken to select a representative sample from the total population of students during sampling. The researcher selected a sample of 757, 367, 268 and 486 out of total population of 7566, 3672, 2682 and 4863 users
respective in the four surveyed libraries for this study i.e. DU, JNU, AMU and BHU. The total number of population and sample selected for the study is shown in table 1.

### Table 1: Total Population and Sample Population

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Faculty of Social Sciences</th>
<th>Faculty of Arts</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DELHI</td>
<td>UP</td>
<td>DELHI</td>
</tr>
<tr>
<td>Faculty Members</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>16</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>JNU</td>
<td>164</td>
<td>93</td>
<td>162</td>
</tr>
<tr>
<td>AMU</td>
<td>14</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>BHU</td>
<td>143</td>
<td>14</td>
<td>124</td>
</tr>
<tr>
<td>Research Scholars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>120</td>
<td>131</td>
<td>120</td>
</tr>
<tr>
<td>JNU</td>
<td>1202</td>
<td>1310</td>
<td>1202</td>
</tr>
<tr>
<td>AMU</td>
<td>48</td>
<td>78</td>
<td>48</td>
</tr>
<tr>
<td>BHU</td>
<td>483</td>
<td>785</td>
<td>483</td>
</tr>
<tr>
<td>PG Students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>311</td>
<td>57</td>
<td>311</td>
</tr>
<tr>
<td>JNU</td>
<td>111</td>
<td>195</td>
<td>111</td>
</tr>
<tr>
<td>AMU</td>
<td>689</td>
<td>1951</td>
<td>689</td>
</tr>
<tr>
<td>BHU</td>
<td>566</td>
<td>1951</td>
<td>566</td>
</tr>
<tr>
<td>Total</td>
<td>309</td>
<td>151</td>
<td>309</td>
</tr>
<tr>
<td></td>
<td>3091</td>
<td>1510</td>
<td>3091</td>
</tr>
</tbody>
</table>

**Questionnaire Administered**

The survey was designed to assess the use of online databases subscribed by the chosen libraries. To determine the use of the library’s online databases, the survey was conducted during the period of March 2013- April 2014. A set of questionnaires were distributed among librarians in the central libraries of the concerned Universities and collected back the completed questionnaires from them for data analysis.

The questionnaires designed for users were distributed to faculty members, research scholars, and postgraduate students to determine the use and differences in usage of online databases among the users of the faculties of the Social Sciences and Arts in the select universities in Delhi and UP. Data was collected from the users of concerned faculties of select universities in between March 2013 to April 2014 during peak hours, i.e. 9 a.m. to 1.00 p.m. and from 2.30 to 5 p.m. on all working days. The questionnaires were distributed to users to collect data. A total of 964 questionnaires were administered in the faculties of Social Sciences and Arts respectively in the University of Delhi during the month of March, 2013. In JNU, overall 442 questionnaires were administered in the School of Language, Literature and Culture, School of International Studies and School of Social Sciences in the month of March, 2013. The Aligarh Muslim University was covered in the month of October and
November in 2013, where 347 questionnaires were distributed in both the concerned faculties. In BHU, 705 questionnaires were administered during the period of March to April, 2014.

**Response Rate**

The overall response rate of the librarians and users is shown in table 1 and table 2 and university wise questionnaire analyzed is shown in figure 2.

**Table 1: Librarians Response Rate**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DU</td>
</tr>
<tr>
<td>1.</td>
<td>Number of Questionnaires Administered</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Number of Questionnaire Received</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Number of Questionnaire Analyzed</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Response Rate (%)</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 2: Administration of Questionnaire and Response Rate of Users (FM, RS and PG)**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Library</th>
<th>Number of Questionnaires Administered</th>
<th>Number of Questionnaire Received</th>
<th>Number of Questionnaire Analyzed</th>
<th>Response Rate (%)</th>
<th>University wise questionnaire analyzed (%) (Out of 1878)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DU</td>
<td>964</td>
<td>889</td>
<td>757</td>
<td>78.53</td>
<td>40.31</td>
</tr>
<tr>
<td>2.</td>
<td>JNU</td>
<td>442</td>
<td>396</td>
<td>367</td>
<td>83.03</td>
<td>19.54</td>
</tr>
<tr>
<td>3.</td>
<td>AMU</td>
<td>347</td>
<td>305</td>
<td>268</td>
<td>77.23</td>
<td>14.27</td>
</tr>
<tr>
<td>4.</td>
<td>BHU</td>
<td>705</td>
<td>641</td>
<td>486</td>
<td>68.93</td>
<td>25.88</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2458</td>
<td>2231</td>
<td>1878</td>
<td>76.40</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 1.2: University Wise Questionnaire Analyzed**
Data Analysis

After collecting the relevant data for the study from DU, JNU, AMU and BHU using various data collection techniques, such as questionnaires and literature review. The data was organized, analyzed, compared, consolidated, tabulated and interpreted by frequency counts, percentages and applying statistical tools. The software package SPSS have been used to verify the validity of results. In the light of above data, useful findings, recommendations and conclusion have been derived. Based on analyzed data, findings, conclusion and suggestions have been drawn.

FINDINGS

PART-A: Major Findings derived from the Responses of Librarians

The major findings of the study, in summarized form, conducted among the librarians/ librarian-in-charges of the libraries under study are following:

1. Amongst the surveyed libraries, only the library of BHU has separate budget for the subscription of online databases, where as the other surveyed libraries did not have any budget for the purchase of online databases.
2. Amongst the four libraries under study, DU has the highest number of online databases, 79 followed by JNU (66), BHU (24) and AMU (24).
3. In the libraries of DU, JNU, AMU and BHU, Faculty recommendations are the prominent source for selection of online databases, followed by user recommendations in DU, JNU and AMU, while the recommendations of library committee are considered by for selecting online databases in the libraries of JNU, AMU and BHU. News groups, reviews and vendor’s recommendations are the less preferred sources for selection.
4. Selection of online database in the surveyed libraries is mostly done according to the coverage, authority/publisher, cost, licensing policy, user’s need, and functionality and reliability of the sources. The other options of selection include; authentication, technical feasibility, vendor support and user interface as the least preferred for selecting online databases.
5. Online databases are procured in all the select university, viz., DU, JNU, AMU and BHU libraries through both consortium and direct subscription from vendors.
6. Libraries of DU, JNU, AMU and BHU are mostly preferred publishers to be an important and reliable mode of acquisition, followed by online database aggregators (Proquest, EBSCOhost etc.) in JNU, AMU and BHU and
professional organizations are the other modes used in JNU and BHU for acquisition of online databases

7. The libraries of DU, AMU and BHU provide on campus access to online databases through recognized IP address; while on campus ID & password protected access to subscribed databases is provided in the libraries of JNU, AMU and BHU. Only the JNU’s library offers remote access to online database which enables its registered users to access it anywhere from the world.

8. The libraries under study are using proxy servers to provide access of its subscribed online databases to registered users only.

9. Library staff of the libraries under study of Delhi and UP, agreed that the usage of print sources has decreased as use of online databases has increased.

10. In DU, JNU, AMU and BHU libraries, usage statistics is used to find out the use of online databases. However, log analysis is also used to determine the overall use of online databases, but it is not applicable for the discipline wise usage study. In the library of DU, usage of online databases is also determined by the Usage Register used to record the particulars of online databases.

11. According to the usage statistics usage provided by the library of JNU, JSTOR has the highest usage in 2013 and 2014 respectively. In both the years, Annual Reviews was recorded as the least used online database.


13. Science Direct was found to be among the highly used online databases in BHU in the years of 2013 and 2014, while as Project Muse recorded minimum usage in both the years, i.e., 2013 and 2014 respectively.

14. Comparative usage analysis of online databases among JNU, AMU and BHU reveals that, in the years 2013 and 2014, JSTOR was the most used online database in the faculties of Social Sciences and Arts in JNU. However, Science Direct was highly used by the users in AMU in 2013 and 2014. The same pattern of usage was seen in BHU, where Science Direct had maximum usage among the online databases. Annual Reviews was found to be among the less used online databases in JNU, while, Annual Reviews in 2013 and Project Muse had comparatively less usage in AMU for the 2014. In the years
of 2013 and 2014, Project Muse was ranked as least used online databases in BHU.

15. Price of online databases and limited access to number of users and sites are the main problems faced by the library staff of JNU, AMU and BHU, whereas back issues & archiving in DU and AMU and lack of value added services in AMU only while procuring online databases. In JNU library staff does not face any problems while subscribing to online databases.

16. Difficulties related to networking, insufficient collection, lack of skilled/trained IT personnel and inadequate library resources (equipments), lack of skilled or trained staff and technical problems are identified as the major problems by library staff of all the surveyed libraries except JNU (Table 5.11).

17. The facility of computer lab, adequate number of terminals, 24x7 accessibility through Wi-Fi and support services are provided by all libraries, while audio visual devices are provided by the AMU and JNU libraries. The facility of Ask a librarian in DU, AMU and BHU and the facility of trial access in DU, JNU and AMU, whereas online tutorials is only provided by the DU library.

18. Library website is the most popular medium used by the libraries to alert and inform about its collection and services. The libraries of DU, JNU AMU and, BHU update their users by providing information through their library websites. University web pages and Emails are used by the libraries of JNU and AMU, while notification by AMU’s library used to update their users.

19. The service of Tutorials or Manuals is also provided in libraries of DU, JNU AMU and BHU, to help the customers in using their product. The database providers offer Trial evaluation/Promotional materials and Technical/Customer support to complement their services for the DU, JNU and AMU libraries. While the provision of product customization and feedback is provided in BHU and AMU library respectively.

20. According to the librarians, lack of awareness in JNU, AMU and BHU; while as lack of IT skills/expertise in DU, AMU and BHU are the major factors responsible for the less usage of online databases. However, lack of interest in online sources is observed in DU and BHU, lack of orientation programmes in AMU and JNU and more dependence on print sources and improper provision of library services in AMU are mentioned as reason for less usage of online databases in AMU.
21. The libraries of DU, JNU and BHU are regularly organizing different types of training and orientation programmes for their staff and users to help them in using online databases. However, the library of AMU does not organize any training programme or orientation programmes either for staff or users for better use of online databases.

22. The libraries of all the three universities except AMU are regularly organizing library orientation and training programmes. The Demonstration of online resources through Publishers/ Commercial Vendors is conducted in BHU and JNU libraries. Training/ workshops were organized by the libraries of DU, JNU and BHU, while as the libraries of DU, JNU and AMU organized different types of Information Literacy Programmes to educate their staff and users about the benefits and use of online resources.

PART- B: Major Findings of the Responses Derived from the Library Users

This part discusses major findings of the survey conducted among the users of the select libraries under study as given below:

1. Awareness of online databases among the users in the universities of Delhi is higher as compared to the users in the universities of UP, i.e., 38.04% in DU and highest 71.93% in JNU 28.35%, whereas in AMU, and 20.27% in BHU. Amongst the user groups, faculty members (90.91% DU, 100% JNU, 50% AMU, 44.44% in BHU) have more awareness about online databases as compared to research scholars (62.92% DU, 75.63% JNU, 41.24% AMU, 33.33% in BHU) and postgraduates (26.74% DU, 57.14% JNU, 15.86% AMU, 11.44% in BHU) in all the select universities. It is heartening to note that only a very small percentage (15.86%) of the PG students in AMU were confident about their level of awareness with online databases, the condition is still poorer when it comes to as only 11.44% of the PG students are confident about their awareness.

2. Internet is regarded as the main source of information through which majority of the users in BHU (67.08 percent) followed by DU (59.71 percent) and AMU (57.83 percent) get acquainted with online databases, while a significant number of users (77.83 percent) in JNU got informed about online databases from the library website. Internet users’ majority belongs mostly to Research Scholars, as 73.03% in DU, 67.01% in AMU and 76.39% Research Scholars
in BHU, on the contrary, most of the Research Scholars (79.83%) in JNU used library website as source of information about online databases.

3. A high percentage of users in all the select universities except JNU use online databases occasionally, though in JNU, users mostly used online databases in 2-3 times a week. Amongst the occasional users, PG has the higher percentage as compared to others groups in DU, AMU and BHU. In JNU, majority of the faculty members used the online databases 2-3 times a week.

4. Majority of the respondents in DU most of the users like to use online databases for updating knowledge, conversely in JNU, online databases are mostly consulted for writing papers, while in AMU and BHU use online databases for preparing assignments and project.

5. Journal articles are the most preferred online database resources in the universities of Delhi and UP, i.e. faculty members in DU (100%) and all the faculty members and research scholars in JNU as 100% use online databases for accessing journal articles, while in AMU and BHU, research scholars(100% and 95.83%) are the prominent users of Journals articles. Among the respondents of DU, BHU and AMU, miscellaneous materials (reviews and editorials) are the least preferred sources, while books are kept under the category of least used resources in JNU.

6. More than fifty percent of users in DU, AMU and BHU; i.e. mainly research scholars (75.84%, 76.29% and 70.14 % respectively) access online databases from the university computer centre. However, university library is considered as a central place for accessing online database by the majority of users (79.83% research scholars) in JNU.

7. Full text documents in online databases are usually preferred by a larger percentage of users, such as in DU (90.91% FM, 100% RS, 90.84% PG %), in JNU(91.67% FM, 96.63% RS, 87.62% PG), AMU (84.64% FM, 100% RS, 84.83% PG) and BHU(86.11% FM, 98.61% RS, 81.7%PG).On the other hand, multimedia based information is least preferred by the users of DU(36.36% FM, 21.91% RS, 20.69%PG) and JNU(16.67% FM, 18.06% RS, 10.48%PG). respectively, whereas numeric or statistical type of information got least responses in AMU(93.23% FM, 20.62% RS, 14.48%PG). and BHU(16.67% FM, 16.67% RS, 7.19%PG).
8. In all the surveyed libraries of Delhi and UP, the majority of 68.03% from DU, 84.2% in JNU, 71.27% in AMU and 66.46% in BHU determined the relevance and reliability of documents through its content. However, the hyperlinks preferred least by the users in DU (7.26%), JNU (10.08%), AMU (4.85%) and BHU (5.55%) to determine the worthiness of the documents retrieved through the online databases.

9. In DU, JSTOR, Science Direct and Project Muse were the most used online databases by the faculty members, research scholars and postgraduates respectively. On the contrary, LISTA and ISI Emerging Markets CEIC Asia were less used online databases in the faculties of Social Sciences and Arts in DU.

10. Science Direct was the most used database amongst the faculty members and research scholars, while JSTOR was preferred mostly by the postgraduates in JNU.

11. JSTOR was the most popular database amongst the faculty members and research scholars, while Emerald was most used by the postgraduates. While the databases, Annual Reviews, Wiley Inter science and ISID were least used by all the user groups in AMU.

12. The online database JSTOR was ranked first by the faculty members and postgraduates, while Emerald rated at first position by most of research scholars, in BHU.

13. Comparative study shows that, JSTOR is the most used online database in DU, AMU and BHU, while Science Direct is the online databases that most commonly used by the users of JNU.

14. Search engine is the most preferred and easiest means to access online databases. Majority of users as in AMU (75.75%) followed by BHU (70.99%), JNU (70.57%) and DU (67.11%) was accessed online databases through search engines. Although, access to online databases through publisher website was the least preferred means to access online databases among the users of all the surveyed universities i.e. total 29.06% in DU followed by 25.61% in JNU, 20.15% in AMU and 24.07% in BHU.

15. In the universities of Delhi and UP, highest responses received were for Basic search (88.24% in DU, 83.92% in JNU, 88.06% in AMU and 84.77% in BHU, respectively), followed by Advanced search (69.75% in DU, 56.54%, in
JNU, 40.67% in AMU and 27.57% in BHU respectively). Expert search (8.32% DU, 11.44% JNU, 6.34% AMU and 4.93% BHU respectively) and a very less number of users as 3.04% in DU, 7.36% in JNU, 4.48% in AMU and 1.85% in BHU used Citation locator technique for searching citation related information in online databases.

16. With regard to the advanced search technique, Boolean operators is the most preferred search strategy used by majority of users in DU (69.7% faculty members, 77.52% research scholars, and 60.80% postgraduates) and BHU (55.55% faculty members, 63.89% research scholars, and 53.92% postgraduates), on the contrary, the option of searching by field search is used most by the respondents of JNU (75% faculty members, 84.45% research scholars and 76.19% postgraduates) and AMU (69.23% faculty members, 75.26% research scholars and postgraduates 58.62%). However, the proximity search is used very rarely in all the select universities of Delhi and UP, as 5.81% in DU, 11.72% in JNU, 6.34% in AMU and 4.11% in BHU.

17. PDF is the most preferred format used to read or download documents from online databases, as 100% users in JNU and DU respectively; while a little less in AMU (97.39 percent) and BHU (96.50 percent) used it to access information from online databases.

18. Print documents are more favoured by the users of AMU and BHU respectively. On the contrary in DU and JNU a large number of users showed more interest towards online journals rather than print documents. In DU and JNU a large number of users in the faculties of the Social Sciences and Arts 51.52% and 65.94% respectively showed more interest towards the online journals rather than the print documents, On the contrary, in the universities of UP (AMU and BHU), print forms were more preferred by the users i.e., 64.92% and 65.43% respectively.

19. Amongst the different features of online databases, ‘search option’ was the most preferred option among the users of JNU, AMU and BHU whereas ‘browsing’ got highest rank in DU.

20. Majority of users in the faculties of Social sciences and Arts in the surveyed universities was around, 89.10% users in JNU followed by 81.50% in DU, 85.18% in BHU and 77.24% from AMU opined that the use of online
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databases has tremendously benefitted them and enabling them to locate their information within a fraction of time with greater ease.

21. Variations are seen regarding the impact of online databases on education and research in the select universities of Delhi and UP. In DU, 80.39% users mentioned, access to wider range of information and 75.53% of the users in JNU, stated easier and faster access to information of interest as a major impact factor of online databases. In AMU (78.26%) mentioned that they accessed authentic and reliable information through online databases, while access to more up-to-date information is stated as one of the impacts of online databases by 62.08% of the users in BHU.

22. The non availability of off campus access to online database is the main obstacle in the optimal use of online databases according to 75.69 percent of the users in DU. As it is seen that the ratio of problems in JNU is lesser than as compared to other surveyed universities, as only 40.95 percent of total respondents mentioned that the inadequate collection of online databases impeded the use of online databases. However, having more interest in print sources is recognized as a main factor responsible for less usage of online databases in AMU (76.49%) and BHU (57.82%) respectively.

23. Majority of users reported networking problems (connectivity or slow speed) as the main problem that prevented them from making optimum use of online databases in all the surveyed universities except JNU, such as DU(76.35%), AMU(79.48%), BHU (53.91%) stated about this problem. However, the majority of respondents in JNU as 58.33% faculty members, 57.56% research scholars and 47.62% postgraduates reported retrieval of irrelevant information as a problem faced while searching through online databases.

24. Some of respondents in the surveyed universities strongly agreed that online databases are sufficient enough in catering to their information needs. However, a moderate percentage of users in all the surveyed universities of Delhi and UP, such as 74.39% in JNU, 56.41% in DU as compared to 44.78% and 54.94% from AMU and BHU were agreed that sufficient number of online database available in their libraries.

25. A majority of users in the universities under study were quite satisfied with the online database collection and services provided by their respective libraries; which is higher in JNU as 75.48 percentage followed by DU (56.54
percentage), BHU (49.38 percentage) and AMU (40.3 percentage). Only a few users in DU, AMU and BHU showed high level of dissatisfaction regarding the online database collection in the central university libraries of Delhi and UP.

26. As far as efficiency of library staff of the surveyed libraries of Delhi and UP is concerned, a considerable percentage of users, i.e., 66.48% in JNU followed by 57.82% in BHU, 55.97% from AMU while 55.35% in DU pointed out that the library staff of their libraries is quite efficient in providing help regarding the use of online databases.

27. Accessibility of online databases through the computer lab is the most appreciated facility among the users of DU (59.31%), and BHU (71.81%), whereas in JNU around 67.57% mentioned about the facility of 24x7 accessibility through Wi-Fi to online databases. However, majority of users in AMU i.e., 44.78% mentioned help & support as an important facility provided by library staff of their respective library.

28. Majority of online database users from the faculties of Social Sciences and Arts of central universities of Delhi and UP, as in DU (83.35%), followed by JNU (78.75%), BHU (62.96%) and AMU (56.34%) revealed that their libraries are providing assistance by different means to enhance the use of online databases.

29. With respect to the types of support provided by the libraries, the majority of users in all the three libraries; JNU (56.25% FM, 65.93% RS and 65.43% PG), AMU (62.5% FM, 57.33% RS and 75% PG) and BHU (70% FM, 65.96% RS and 75.74% PG) responded that they are greatly benefitted by the personal help provided by the library staff for proper utilization of online databases. However in the University of Delhi (DU) higher appreciation of the users goes to online tutorials such as, 53.85% of FM, 68.92% by RS and 48.14% from PG.

RECOMMENDATIONS AND SUGGESTIONS

The following are the recommendations made by the investigator on the basis of analysis of the data and suggestions from the users as given below:

**Budget**

- With a limited budget, the library has difficulty to purchase adequate databases. Therefore to optimize the use of the budget, the library should
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regularly analyse the data from the user reports and frequently conduct quick surveys to identify the amount of usage of each subscribed databases. These results help in taking decisions on whether to continue an existing subscription or replace it with a new database.

Awareness

- Awareness and user education programmes should be arranged to promote the use of online databases amongst the users of all the surveyed libraries. Mainly, the library of AMU should organize user education program, information literacy programmes for creating awareness and educating them to make maximum use of online databases for academic work.

Use of Online Databases

- It is revealed from the study that a less percentage of the users, especially postgraduates in AMU and BHU use the online databases. Hence, to increase the frequency of use of online databases subscribed by the libraries of AMU and BHU, they should be informed about the importance and availability of online databases and the techniques used for finding the required information from the databases. The teachers should motivate their students to use online databases more for obtaining the required information for their study and research work.

Acquire more Online Database

- The study reveals that libraries in universities of UP have a comparatively less collection of online databases as compared to Delhi’s university libraries. So, libraries of AMU and BHU should subscribe to more databases and facilitate more full-text access either through UGC-INFONET consortium or from other sources to fulfill the diverse needs of users. This is also implies that the research output is directly related to the use of online databases.

Source of Information

- As the library website is an important means of getting information about accessibility of online databases, but the users of AMU, BHU and DU prefer it less as compared to JNU. Library websites of concerned libraries should be redesigned to provide adequate information or links of online databases available in the libraries.
More Importance to Print Documents rather than Online Documents

- It is clear from the study that majority of the users in AMU and BHU, particularly faculty members and postgraduates mostly preferred to use print documents, inspite of using online documents. They considered print documents as a chief source of getting the required information. Therefore, concerned libraries should subscribe to online databases after assessing the requirements of the users; also teach them about its worthiness so as to increase the use of subscribed online databases. The librarians must find out the reasons for the less usage of the online databases. Feedback can also be taken from users to find out the reasons.

Search Methods

- The users use different types of search methods for getting the required information. The study shows maximum number of users in all the universities under study prefers to use mostly ‘Basic/Keyword search’ for searching their required information. The other search methods are less used by the users, like advanced search, Expert search and less frequently Citation Locator. Thus, there is need to provide practical training to help users to acquire better search skills for using different search methods.

Problems Faced in using Online Databases

- The problematic areas as mentioned by the users faced while accessing the online databases include more interest in print form, non availability of off campus access and inadequate collection. The libraries, mainly AMU and BHU should organize awareness programmes to develop user’s interest in online databases.

- The main problem in using online databases is Networking (poor connectivity) in the universities of DU, AMU and BHU. The university administration should provide proper and high speed Internet connectivity to overcome the problem of networking. Another problem is the irrelevant retrieval of information in JNU. Therefore, the library staff should impart knowledge to users for refining their search for searching and proper utilization of online databases.

Facilities for Accessing Online Databases

- The study shows that no postgraduates are allowed to access online databases from the university library in AMU. This may be due to inadequate computer
facilities or limited space in library’s computer lab. More number of
networked computers with access to online databases should be installed, and
repair of the non-working computers in the library should be carried out. PG
students should be allowed to use the online databases, so that they are not
kept away from this important source.

**Satisfaction with Online Database**

- More than thirty percent of the users of AMU and BHU were dissatisfied with
the online databases subscribed by their libraries. The users of DU and JNU
were more satisfied with online database collection available in their
respective libraries as compared to the users in Universities in UP. The library
authorities should necessary steps to improve the subscription of the online
databases after assessing the needs of the users, especially postgraduates.
Furthermore, the publishers/aggregators of online databases should come
forward to publish more number of online databases in the field of Social
Sciences and Arts as there are no separate databases available for these
disciplines.

**Assistance by Library Staff**

- To provide adequate assistance to the users in using online databases, library
staff must possess skills to assist the users in accessing online databases. The
staff should be given enough training in using or accessing online databases.

**User Training Programmes**

- The study shows that the research scholars in all the universities under study
have more knowledge and are using more online databases than other user
groups. Libraries should conduct special training programmes to the
postgraduates and faculty members of the faculties of Social Sciences and Arts
in making them aware of online databases, how to use and how to access
online databases efficiently and effectively. There is a need for extensive
training programme on regular basis at the beginning of each semester for the
students and faculty members of both the faculties under study in both Delhi
and U.P.
AREAS FOR FURTHER RESEARCH

Based on the findings of this study, the following suggestions have been made for further research:

- The present study was conducted among limited number of central universities; the study can be extended to understand the use of online databases in other central universities of India.
- A study can be conducted to find out overall growth and development of online databases by using usage statistics.
- A comparative study can be undertaken to evaluate the accessibility and usage of subscribed online databases in other fields of education.
- A citation analysis can also be conducted to know the citation trend of use of online databases in the thesis/dissertations and research publications in the central universities in the country.
REFERENCES


