RESEARCH ARTICLE

USE OF WEB RESOURCES AND ITS RETRIEVAL PATTERN AMONG RESEARCH SCHOLARS OF GURU NANAK DEV UNIVERSITY: A SURVEY.

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Abstract:
Web resources are very popular now days and libraries are subscribing wide range of web resources. In this scenario, it has become essential to know whether the acquiring of web resources in libraries is of any use, whether users are aware of these resources and use to the maximum. Present study is an effort to find out the awareness level and use of web resources among research scholars and to help libraries to frame policies and programmes and to popularize web information resources among users. A well-structured questionnaire is administered among the 100 research scholars of both categories-Arts & Humanities and Sciences &Electronics. It reveals that the awareness of e-journals and e-books is optimum among researchers and majority of research scholars use mainly web resources for the research. The study also shows that search engine is the most popular web tool for identification of new web resources. WWW is most popular internet service among research scholars.

Key Words:-Web-resources Awareness, Library, Research scholars, Databases, Subject gateways.

Introduction:-
Web resources also known as online resources, digital resources, e-resources are most sought after resources among researchers. The use of the Internet in the educational environment has enabled easy access to many resources, and information sharing has, therefore, significantly increased. The emergence of different web resources has accelerated the pace of research and development, helping scholars to access variety of resources at the click of the mouse. Consequentially the demand use of web resources is increasing rapidly particularly among researchers for smooth flow of information which has helped them to keep a track of developments in their own fields. Thus web resources awareness and use among scholars warrants to be reviewed to help stakeholders to frame their selection and acquisition policies in higher learning institutes.

Web resources have gained popularity among university research scholars and it is drastically altering their ways to research. However, to know as how research scholars in the university use web resources, present study has been carried out. A survey is conducted to examine the awareness and use of web resources and its retrieval pattern among university research scholars and problems they encounter while using web resources in the Bhai Gurdas library of Guru Nanak Dev University.

Objectives of the study:-
The main objectives of the present study are:
• To assess the awareness level and understand use of web resources among research scholars.
• To determine place of using web resources by research scholars.
• To identify the various search tools for retrieval of the web resources.
• To know the barriers while using web resources.

Scope of the Study:-
The scope of the study is limited to reveal awareness level, use and tools of the web resources among research scholars of department of Guru Nanak Dev University which are divided into two categories- Arts & Humanities and Sciences & Electronics.
Review of Related Literature:

Asemi (2005) conducted a survey on five faculties to find the search requirements related to the use of the Internet information. Results of the data showed that all the respondents were using the Internet frequently and the researchers were getting quality information through the Internet by using it in different ways, such as accessing online journals, downloading software or text, chatting, discussion, e-mail services and finding related references. It was revealed that Internet services were normally used for research and Google and Yahoo search engines were more widely used compared to other search engines. Amritpal Kaur (2006) examined the use of e-resources by teachers and researchers of science engineering and technology faculties, Guru Nanak Dev University and found that all the respondents admitted that e-resources could be good substitutes for conventional resources if the access speed was fast and access to all the important e-journals was provided. Atilgan and Bayram (2006) determined the level of awareness and usage rate of digital library resources in their survey on the use of e-databases by faculty of Ankara University, Turkey. Major findings revealed that most of faculty was aware of digital library resources. Mustafa. (2006) in his study revealed that the researchers used the web for various purposes. Majority of the researchers (62.8%) used it for study and research and most of the research scholars from English (84%) liked to search by author followed by name of journal (70%). Asemi and Riyahiniya (2007) determined the relationship between awareness and use of digital resources among medical science students at Isfahan University in their study and revealed that most of the students (70%) were aware of digital resources and 69% of them used these and major problem faced by the students was slow ‘speed connectivity’. Khaisher and Prawadini (2007) examined the use of e-journals and e-databases at university of Mysore and found that 65.5% of the respondents used UGC-Infonet to some extent. 50% of the respondents were ‘a little satisfied’ and 18% ‘somewhat satisfied’ with the use of e-journals and e-databases. 90% of the respondents had not had an opportunity to attend training programme. Sharma (2008) in his survey on the use of internet in Punjab Agricultural University and Haryana Agricultural University observed that majority of the respondents (66%) of both the universities found internet an important tool for research. 72% of the respondents of CCSHAU and 68% of the respondents of PAU used internet for seeking primary information. The study showed that 22% in CCSHAU and 30% in PAU were able to find the desired information frequently with use of internet. 49% of the respondents in PAU and 43% in CCSHAU devoted 0-2 hours on Internet per week. Baljinder and Verma (2009) examined the awareness of the students, research scholars and teaching staff of Thapar University. The study showed that 36.29% of the respondents were not aware of e-resources and services. Those who were aware, only 55.65% used e-resources. The finding of the study revealed that there was an increase in the number of electronic journals and these were used extensively. Chowdappa, Chandrashekar and Ramasesh (2009) analysed the dependency of the users of educational and research institutions of Mysore city on the electronic/digital media and showed the degree of the use of digital information resources compared to the conventional print media. The study revealed that 64% of the respondents relied between 75% to 100% upon books and journals for research purposes and only 26% for study and research. 69% of the respondents depended on online journals to the extent of 75% to 100% to fulfill their information needs. Most of the users relied on internet for availing e-mail facility (95%), for accessing e-journals (93%). 77% of the respondents depended on e-resources to the extent of 75% to 100% to access recent and accurate information. Sharma (2009) observed in his study that the majority of the teachers (88.46%) and research scholars (93.33%) preferred to use e-journals and most of the respondents accessed e-journals and search engines to get required information at Guru Gobind Singh Indraprastha University. 46.15% of teachers and 56.67% of research scholars prefer to use e-journals whereas 71.15% of teachers and 46.67% of research scholars made the use of search engines to get the desired material. The main concern of Sahin (2010) study was to investigate the diversity, accessibility and reliability of the internet resources used by the inexperienced university students during literature review. Results showed that the more useful reliable information could be gathered using less accessible and more secure internet resources. Sheeja (2010) ascertained scholars’ perceptions of facilities and resources in university libraries in Kerala and observed that university libraries in Kerala were of hybrid type. Majority of the electronic resources available at the universities came from UGC-INFONET e-journal consortium. Survey revealed that scholars preferred e-resources over print resources and they were consulting e-journals from their university library and departmental lab and recommended an increase in the number of journals and online full text databases in each area of specialization and digitization programme for the convenient use of library documents. The study conducted by Egererongbe (2011) has shown that majority (90.6%) of lecturers and 80.0% of research scholars preferred to use e-journals, 71.4% of lecturers and 78.6% of research scholars were reported in the survey as being aware of e-resources. It found out that 69.8% and 14.3% of lecturers and scholars respectively had taken training regarding access to electronic resources. Tiyagi and Kumar (2011) examined the use and impact of electronic information resources on quality of research and pattern of using these resources by the scientists of pharmacopoeial libraries in Northern India and showed that all the respondents considered e-journals, online databases, internet facility, CD-ROM databases and scan/xerox/printout facility as the
preferred sources for accessing information. Majority of the scientists used electronic information resources (EIR) for "ongoing research work", writing a research paper for public and for specific information. All the scientists preferred online version of journals. All the scientists were highly satisfied with the access of electronic information resources. Khan (2012) studied the usage of e-resources by the students and research scholars of botany department of Aligarh Muslim University and observed that 88.16% research scholars used periodicals 'daily' and all the research scholars (100%) were aware of e-journals. 46.67% of the research scholars were 'partially satisfied' with infrastructural facility provided to them. It found that majority of the research scholars (46.67%) preferred to use journals in “both electronic and print form”. Sethi (2012) unfolded the awareness, utilization level of electronic information services and strategies adopted by the scientists of department of life sciences of Sambalpur University and revealed that 92.18% of the respondents preferred to use e-resources compared to print documents. Findings of the study revealed that lack of training to the users to access information was one of major constraints in effective use of e-resources. Shafi and Maqbool (2012) studied that the most popular web resource among scholars was 'online journal' and 'e-book' (100%). The 'ETDs' had become popular among users all over the world among researchers. Its awareness level was more among the scholars 75% of university of Kashmir than University of Jammu. The 'World wide web' and 'e-mail' were the most popular services among research scholars. All the scholars utilized these web services particularly e-mail and the most popular subject gateway among researcher is 'Intute'-a general gateway used by scholars. 'Virtual Library' turned out to be the second popular subject gateway of scholars. Most scholars made use of the gateway mainly were associated with University of Kashmir. Shaji and Jalaja (2012) surveyed 45 faculty members from various disciplines in an attempt to investigate the use and their perceptions of electronic information resources available at University of Calicut and concluded that 48.9% of the faculty members used e-resources once in a week followed by daily for current and up to date information and faced difficulty in finding relevant information followed by lack of IT skill (24.44%) and information flow. Based on the findings of the study, the authors suggested for conducting periodical training programmes and providing more e-resources for the users. Sohail and Alvi (2014) in the survey found that 100 % of the students of Jawaharlal Nehru Medical College, were aware of web resources and mostly made use of them. 31.13 % medical students used web resources for improving knowledge and finding information quickly and 32.60 % students of MBBS, MD/MS and PG Diploma used web resources and majority of the students found web resources as reliable. Sudha and Kavitha (2015) studied the use of web resources by the Education students and scholars of Periyar University, Salem, Tamilnadu and observed that most of the research scholars and M.Ed Students used Google Chrome (Web Browser) and 38%, 30% of M.Ed Students and research scholars are access e-journals and e-books.

Research Methodology:-
A well-structured questionnaire was designed to obtain the data required for the study. In order to have a thorough understanding of use of web resources among research scholars of various departments- Arts & Humanities and Sciences & Electronics, these were divided into two categories and random sampling was employed to both categories that allowed selection of equal number of respondents from the categories. The questionnaires were distributed among 100 research scholars from Arts & Humanities and 100 to Sciences & Electronics irrespective of total number of researchers registered. Collected data was stored in MS Excel and analysed with help of SPSS. Moreover, analysed data is supported with charts. In the study, wherever necessary the data is correlated with the findings of available literature to make objectives of the study more meaningful.

Data Analysis and Interpretation:-

![Distribution of Questionnaire](image)

**Figure 1:-** Distribution of Questionnaire
Figure 1 shows that 200 questionnaires were distributed to the research scholars of Sciences & Electronics and Arts & Humanities departments. Out of 200, 100 copies were distributed to research scholars of departments - Sciences & Electronics and 100 to departments - Arts & Humanities. Entire 200 questionnaires were completed and collected. It is concluded that the response rate is 100%

**Gender wise Respondents**

![Gender wise Respondents](image)

**Figure 2:** Gender wise Respondents

Figure 2 shows the usage of web resources by the respondents’ gender wise. 104(52%) respondents used the web resources are males and 96(48%) respondents are females.

**Awareness of web resources**

![Awareness of Web Resources](image)

**Figure 3:** Awareness of web resources

Figure 3 shows the awareness level of research scholars about web resources. Most of researchers (96.5%) are aware of ‘E-journals’ followed by ‘E-books’ (95%), ‘E-databases’ (91.5%), ‘E-thesis’ (91%), ‘Wikis’ (86%) and Blogs (75.5%). Research scholars are mostly aware of ‘E-journals’ and ‘E-books’. Atilgan and Bayram also observed that 88% of the respondents used e-databases in their study. Tiyagi and Kumar in their survey revealed that all the respondents (100%) considered e-journals, online databases, internet facility, CD-ROM databases and scan/xerox/printout facility as the preferred sources for accessing information. Shaji and Jalaja observed the same that majority of the respondents (93.33%) used ‘internet’ followed by ‘e-journals’ (77.78%), ‘databases’ (62.22%) and ‘e-books’ (26.67%).
Figure 4:- Use of Web Resources

Figure 4 exhibits use of web resources by research scholars. All the respondents (100%) use web resources. It shows that web resources are popular among researchers and these are must in present times. Sharma\textsuperscript{15} ascertained the same in his study that majority of the teachers and research scholars were dependent on e-resources to get the desired and relevant information. Sohail & Alvi\textsuperscript{18} observed the same that 100% of the students were aware of web resources and mostly use these.

Figure 5:- Use of Web-resources in Research

Figure 5 exhibits the use of web resources in research by research scholars. Majority of research scholars (71.5%) use ‘mainly’ web resources for the research followed by ‘equally print and web’ (37.5%), ‘exclusively’ (10.5%) and ‘negligibly’ (1%). It shows that majority of the researchers mainly use web resources for research. Khan\textsuperscript{9} confirmed in his study that majority of the research scholars (46.67%) preferred to use journals in “both electronic and print form”. Sethi\textsuperscript{12} observed too that 92.18% of the respondents preferred to use e-resources compared to print documents.
Figure 6: Location of Use

Figure 6 indicates that majority of research scholars (79%) search the web resources at their ‘Laptop’ and followed by ‘University Library’ (57%), ‘Home’ (35.5%), ‘Departmental library’ and ‘Cyber Café’ (8%) are used only by few. It reveals that most of the research scholars use their laptop because of the ease of anywhere any time access as most of department of sciences provide wi-fi facility to their students. Khan\(^9\) revealed that majority of the respondents preferred to access e-journals at ‘department computer laboratory’. Sudha & Kavitha\(^{19}\) observed in their study that majority of M.Ed students and research scholars 60% search the web resources through ‘University Library’.

Figure 7: Use of Internet Services

Figure 7 shows the mostly used internet services by research scholars. It reveals that most of the research scholars (95%) use ‘World Wide Web’ for searching information followed by ‘E-mail’ (80.5%), ‘Chatting’ (65%) and ‘Listserv’ (2%). Most of research scholars use of popular ‘WWW’ internet service. Similarly, Asemi\(^2\) found in his study that most of the respondents (55%) searched scientific information through the Internet. Chowdappa, Chandrashekara and Ramasesh\(^6\) revealed in his study that most of the users relied on internet for availing e-mail facility (95%), for accessing e-journals (93%). Shafi & Maqbool\(^{13}\) too ascertained that the ‘World Wide Web’ and ‘E-mail’ were the most popular services among research scholars. All the scholars utilized these web services particularly E-mail.
Figure 8 reveals about sources consulted by research scholars to find URLs. It is evident that 70.5% of the research scholars use search engines for finding URLs for information they need for research followed by 'Journal Citations' (63%), 'Friends' (63%), 'Supervisor' (53%), 'Web Directories' (22%) and 'Listserv' (2.5%). ‘Search engines’ is a favourite option among research scholars and most of them use these to find URLs. Similarly, Musthafa10 too had found in his survey that using the search engines to access web resources was the most used method among respondents. 44 percent of English, 42 percent of Urdu, 30 percent of Hindi, 40 percent of Persian and 20 percent of Arabic researchers used this method. Shafi & Maqbool11 observed a similar result. 'Search engine' was being the most popular way of finding the new URLs among scholars. The majority of scholars from both the Universities (40% approx.) used it for identifying new URLs.

Figure 9 indicates the preference of using search engines for accessing web resources among research scholars. It reveals that majority of respondents using ‘Google’ (94.5%) followed by ‘Yahoo’ (21.5%), ‘MSN’ (8%) and ‘Altavista’ (1%). It is found that ‘Google’ search engine is mostly used search engine by research scholars for searching web resources. Shafi & Maqbool11 observed that ‘Google’ is considered the most popular search engine among the scholars (81.66%-86.66%). ‘Yahoo’ is the second most popular primary search engine among researchers of both institutions. Sethi12 too concluded that Google search engine remained as the most preferred search engine.
Use of Subject Gateways

Figure 10: Use of Subject Gateways

Figure 10 reveals the use of subject gateways in research by the respondents. A majority of the respondents (75%) use ‘WWW Virtual library’ in their research. Second option is ‘INFOPORT’(27%) followed by ‘About’(16.5%), ‘SOSIG’(13%), ‘NBS’(6%) and ‘BIZ/ED’(4%). Most the research scholars prefer to use general subject gateway. Shafi & Maqbool\(^1\) revealed that the most popular subject gateway among researchers was 'Intute'- a general gateway used by scholars (46.66%-56.66%). 'Virtual Library' turned out to be the second popular subject gateway of scholars. Most scholars made use of the gateway mainly are associated with University of Kashmir (43.33%).

Use of Databases

Figure 11: Use of Databases

Figure 11 exhibits the use of databases in research.58.5% of the researchers use ‘ScienceDirect’ database followed by ‘ProQuest’(48.5%), ‘EBSCO’(11.5%) and ‘Emerald’(7.5%).Majority of the respondents use database Science Direct. Atilgan and Bayram\(^4\) in their study revealed similar findings. 88% of the respondents used e-databases and Web of Science and Science Direct and these were the most preferred databases by the faculty members. Sharma\(^16\) in his study concluded that Online databases were also very popular among research scholars.
Problems faced while accessing Web Resources

Figure 12 indicates the problems faced by research scholars while accessing web resources. Majority of research scholars (81%) faced problem ‘limited access’ followed by ‘slow internet connectivity’ (77.5%), ‘retrieval of too much information’ (8.5%) and ‘limited searching skill’ (5%). Limited access to web resources, poor Internet connectivity, retrieval of too much information and limited searching skill are the problems encountered by research scholars while using web resources. Musthafa in his study observed that 35.2% of the researchers said that limited access to full text was their main problem, followed by problems of displaying various language fonts, especially the regional languages (30%). Sudha & Kavitha in their survey disclosed the similar results that 30% of M.Ed students faced limited access to computer, 28% of M.Ed students lack of technical knowledge and followed by poor internet connectivity. 26% for M.Ed students faced poor internet connectivity.

Satisfaction level with Web Resources

Figure 13 exhibits the satisfaction level of researchers with the library web resources. 66% of respondents are ‘moderately satisfied’ with the library web resources followed by ‘satisfied’ (28%). It showed that a majority of research scholars are moderately satisfied with the availability of library web resources. Khaiser and Pramodini gave similar findings about satisfaction level. 50% of the respondents were ‘a little satisfied’ and 18% ‘somewhat satisfied’ with the use of e-journals and e-databases. Shaji and Jalaja observed in their survey that 57.78% of the respondents were satisfied with information available in the e-resources followed by 20% somewhat satisfied and 8.89% dissatisfied.

Findings:
- A majority of respondents (52%) used the web resources are males and 96(48%) respondents are females.
- All the respondents (100%) use web resources in research.
- 96.5% of research scholars are aware of e-journals followed by e-books (95%), e-databases (91.5%).
- 71.5% use ‘mainly’ web resources for their research followed by equally print and web.
- Most of research scholars (95%) use popular ‘WWW’ internet service.
- Google (94.5%) is mostly used search engine for finding web resources.
58.5% of the respondents use database ‘Science Direct’.
A majority of the respondents (75%) use ‘WWW Virtual library’ in their research.
Research scholars encountered major problem of ‘limited access’(81%) to web resources followed by ‘poor internet connectivity’ (77.5%).
A majority of research scholars are ‘moderately satisfied’ (66%) with the availability of library’s web resources.

Conclusion:
The findings of the study show that researchers are aware and use web resources but they are not fully satisfied. Therefore, there is a need of regular orientation/training programs for the effective use of web resources that should be organized by the library. To maximize optimum utilization of web resources, researchers’ requirements should be taken into consideration while subscribing to web resources. The concerned departments too should on regular basis, organize workshops on various web resources related to their subjects. Application of ICT ought to be important part and parcel of course work which is taught at the beginning of the PhD courses. There is urgent need to conduct more awareness programmes about use of web resources by university. More high speed computer terminals with broadband connectivity should be installed in each department, departmental libraries and at Bhai Gurdas Library. Library must introduce the Internet based services such as article alert service, content alert and mailing lists for the users. The Wi-Fi connectivity in the campus will provide anywhere, anytime access and improve the habits of using web resources among the researchers.

References: