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Use of electronic information resources at College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia

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This study aims to examine the use of electronic information sources (EIS) by the teaching faculties. The survey was administrated among the academic community along with the observation and informal interviews at the College of Dry Land Agriculture and Natural Resources, 'Mekelle University' Ethiopia in the year 2014. Pre structured questionnaires were sent to 176 teaching faculties to know how they elaborate the various aspects of EIS use such as frequency and purpose of EIS use, frequently used EIS, method of learning to use EIS, benefits of EIS, constraints faced in the use of EIS and the satisfaction level of faculties in the use of EIS. Suggestions have been given to strengthen the existing electronic information sources and services and to maximize the use of EIS in the college of Dry Land Agriculture and Natural Resources, academic community.

Key words: e-databases use, e-journals, electronic information.

INTRODUCTION

Background of the study

Information professionals have long wished to understand what factors are relevant in encouraging a person to seek out information. More recently, a particular focus of inquiry has been on those factors that play a role in deciding to use the library's electronic resources to seek information as opposed to just surfing the Internet. These inquiries assume an even greater importance in light of the fact that more people are using the Internet to find information they need, information that is not facilitated by the library (Kibirge and DePalo, 2000). Library patrons know that libraries have resources that are more comprehensive and scholarly than most Web sites provide. Libraries provide access to scholarly literature that, as a rule, is not freely available on the Web. Often, it is in college that users become aware of libraries' resources, usually while having to write research papers. Assuming that on average most students face the same number and type of papers and assignments during their academic career, it is critical to understand what makes one student use the library's electronic resources while another will not think of the library as a place to find specialized resources for their papers.

Understanding how academician navigates this maze of resources is important in helping us to develop and

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assess pedagogy designed to instruct our academician in library usage. Academic community are more and more Web known (Kibirge and DePalo, 2000); many of them having been brought up around computers and the Internet. However, they matriculate with a diversity of computer and Web-searching skills and experience. Academic community may not have been exposed to library resources, or not be aware of which resources a library might have, or how to make use of them. It is therefore of interest to us to try and understand what characteristics will make one student branch out and explore library resources, while another one might not. A study of undergraduates showed that they looked for the fastest way that would lead to satisfactory results when doing research, going for electronic information sources first (Valentine, 1993). Academic community and students felt uncomfortable, however, asking for help in using the library and spent frustrating hours trying to find information. Currently, with the explosion of full-text resources, it would seem even easier for the student to find a full-text database and select the articles, regardless of whether they would have been the most appropriate for their research activities.

E-resource Collection in the College of Dry Land Agriculture and Natural Resources, Mekelle University library;

1. Internet source.
2. Online Databases; (Full text and bibliographic)
3. CD-ROM.
4. E-Journals.

Electronic resources

An electronic resource is a piece of information stored in the form of electrical signals and is usually found on a computer. This includes information available on the internet. Libraries offer many types of electronic resources, including subject research guides, indexes, electronic books and texts, electronic journals, library catalogs, reference sources, statistical sources, sound recordings and image databases. “Electronic resources” refer to those materials that require computer access, whether through a personal computer, mainframe, or handheld mobile device. They may either be accessed remotely via the Internet or locally. Some of the most frequently encountered types are; E-journals, E-books, Full-text databases, Indexing and abstracting databases, Reference databases (biographies, dictionaries, directories, encyclopedias, etc.), Numeric and statistical databases, E-images, E-audio-visual resources etc.

Types of electronic resources

The emergence of electronic information resources, simply referred to as electronic resources, has tremendously transformed information handling and management in academic environments and in university libraries in particular. Researchers and students use electronic resources and having access to global information resources, particularly the Internet for their scholarly intercourse. Following are major electronic information resources;

1) Internet: Internet has provided a wider access to global information resources such as online databases, e-journals e-prints and other sources of digital information; The Internet is very useful as a communications tool in the Universities among librarians and library clientele. It is the most efficient means of electronic document delivery (Al Fadhli and Johnson, 2006).

2) E-journals: Electronic journals relatively provide efficient access to information and, thus they are easy to distribute to library patrons than traditional print; in the financial stringent environment of higher education system, electronic journals have become a medium which is cheaper than the traditional printed journals (Ellis and Oldman, 2005).

3) Online databases: The most effective way to provide access to electronic books/journals in University libraries is through subscription to online databases which can be accessed through the internet. Online databases are a collection of electronic information sources (e-journals/e-books) by publishers from various fields and disciplines**,** Some of these databases are provided free of charge to libraries in developing countries by their publishers or vendors, others all are paid database for instance; Americam chemical society, American physical society, Royal society, EBASCO, pub Med, IEEE etc (Afolabi, 2007).

4) CD-ROM databases: CD-ROM databases allow users access relevant databases without robust Internet connectivity in libraries. It is therefore cost effective than online databases as information could be accessed off-line without paying for telecommunications fee Besides, CD-ROM databases are of immense value over print if the system is networked, as patrons at their terminals could access information without coming to the library (Afolabi, 2007).

Characteristics of electronic information resources

The following are the major characteristics of electronic information sources; (i) Printing and distribution processes have been virtually eliminated. (ii) Faster reviewing of the electronic information sources saving the precious time of specialist. (iii) The production mode of e-resources offers opportunities to established network communication among the author, editor and referees. (iv) Users can access a particularly article or the entire issue of the e-resources, within no time If required, printouts of the relevant pages can be obtained (v) Since the information is sought from different electronic information sources simultaneously, the retrieved pieces

of information emerge in a package form. (vi) Hypertext and hypermedia formats enable linkages among different sections within an article or among a group of articles in electronic information resources. (vii) Multimedia capabilities can also be incorporate into the journal. This provides an edge over the conventional journal available in print form. (viii) Immediacy is another feature of electronic information resources. (ix) it allows remote access. (x) It can be used simultaneously by more than one user. (xi) It provide time access and at 24x7 formula (Shajarul, 2012).

Statement of the problem

Access to electronic information resources offers opportunities to obtain accurate and timely literature; observation shows that there is low usage of e-resources' in College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia CDLANR Mekelle University library. This is evident from library statistics, register records and from information obtained verbally. Low usage of electronic resources was cited as a challenge to the library management. Although the University Library conducts workshops, seminars and communicates to teaching faculties regularly about the available e-resources, teaching faculties are not effectively using electronic information resources. Some of the available electronic information resources have not been utilized at all. The CDLANR, Mekelle University Library in Ethiopia has made significant investments in e-resources and accompanying computer-based technology to ensure access to e-resources. The library subscribes to a total of 70 electronic databases packages which include full text electronic journals, current awareness services and bibliographic databases. It is not known why there is such low usage of these resources in the CDLANR Mekelle University whose faculty population is almost 176. The objectives of the study were to determine faculty's knowledge of e-resources; faculty's access to computers and use of e-resources, both number and frequency; and the areas of training needed by faculty to utilize e-resources efficiently and effectively and to recommend how the library could fulfill identified training needs and what strategies the library could use to improve service as well as what areas the library could research further. Therefore, it is necessary to know the difficulties about electronic information resources use among CDLANR teaching faculties. This survey serves to benchmark use of e-resources in CDLANR, Mekelle University Library as well as encourages further studies of this nature for different user groups.

Objectives of the study

To carry out the present research study systematically, the investigator laid down the following objectives;

1. To identify the demographic characteristics of the respondents e.g. discipline, age and academic position and effect of these on use of e-resources;
2. To analyze the different purposes of e-resources uses;
3. To trace the problems in using of e-resources;
4. To identify the level of satisfaction with the coverage of the e-resources collection;
5. To find out the awareness and the use of e-resource;
6. To identify the features, functionality and development of e-resources;

Significance of study

The value of the study relates to the understanding of the usage of electronic resources by faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia. This study will amongst others, attempt to identify which of the variables presented play a significant role in faculties use of electronic resources. It is also represents the problems associated with the use of electronic resources and as such the result of the findings of this study contributes to the body of knowledge on faculties' use of electronic resources. And will also be beneficial to academics, researchers, students and professional interested in this area of study. Generally, if one can say that the use of electronic resources for sourcing information by students of higher institution is a must then this study is imperative.

Scope of the study

In present research study data will be collected from all faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia. College of Dry Land Agriculture and Natural Resources consists total four departments; Department of dry land crop and Horticulture Sciences [DCHS], Land resource Management and Environmental Protection [LaRMEP], Department of rural development and Agricultural extension program [DRDAEP],Department of Animal Rang land and wild life Science [DARWS]. Mekelle University located in Mekelle city, and Mekelle is a capital of State of Tigray which is located at North Ethiopia, Ethiopia republic located at North East Africa. Thus the respondents for the present study will be the total faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia.

Limitation of the study

Due to the wide area, this study is restricted to only one out of several Colleges of Mekelle University in Ethiopia as a case study. Therefore, the extent to which the findings of this study meet the need of all others is the

limitation on this study.

LITERATURE REVIEWS

Information acquiring and use patterns in the traditional print environment have been researched into over the years; the electronic environment presents a new and relatively unexplored area for such study. The emergence of electronic information resources has tremendously transformed information handling and management in pure university academic environments; Dongardive (2011) studied the use of electronic resources and how the electronic resources are improving the academic carrier of the faculty and what are the problems that are faced in using the electronic resources. These dramatic changes include the way in which information is provided to the university communities. A number of electronic resources initiatives have been put in place to assist in the development training and use of electronic resources in a number of academic institutions. For the current study, the primary as well as the secondary sources of literature have been consulted. Some journal articles and theses have also been consulted. A number of studies have been conducted. Manohar (2007) find out the internet accessibility of agriculture scientists in the college of agriculture and analyzed impact of internet, e-resources, print or electronic media on academic efficiency. Sinha and Sarkar (2010) examined the search pattern of online journals among the faculty members, research scholars and post graduate students to collect the required data. The study revealed that the majority of users were aware of the availability of online Journals. It was found that users faced problem when using online journals. This study summarizes conclusion from recent research studies and highlights some conclusion about how people use electronic resources. Kling and Callahan (2003) and Giangrande (2002) state that the Annual Review of Information Science and Technology occasionally publishes review articles that focus on electronic publishing or research techniques. Several recent relevant chapters from ARIST are listed in the bibliography. ARIST typically is published every autumn, but the topics vary from year to year. A number of recent publication focus on research methods for library and Web usage studies than general textbooks of research methods. The ARIST chapter by Wang (1999) formed the basis for the categorization of research methods in this report. Liu and Cox (2002)'s, Hurd et al. (2001)'s, Griffiths et al. (2002)'s and Tenopir (2003)'s works are all recent papers that discuss methods for collecting data and measuring usage of electronic library collections. Macintyre (2001) and Luther (2000) discuss the importance of and use of vendor statistics. Chase and Alvarez (2000) describe how to conduct focus group interviews in information contexts. Urquhart et al. (2003) describe in detail critical incident technique as it relates to information behavior studies. This method provides richness in interview or survey data beyond opinions or reports of estimated behavior by asking respondents to focus on details of a specific incident of research or reading. The most important source for libraries planning to conduct their own user studies is the January 2002 report from the Digital Library Federation and CLIR by Covey (2002). Covey explains in detail when to use and how to design studies that gather data from surveys (questionnaires), focus groups, and user protocols (experiments or observations), transaction log analysis, and other research methods. Utilizing the growing range of electronic resources, students must gain and practice the skills necessary to exploit them. For students using a variety of on-line databases, it is as though they were parking lot attendants, where every vehicle is not only a different make and model but has a different configuration. The skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources. These skills include a knowledge of the structure of the database and the instructions which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another. Users do not often appreciate the skills required to search these sources, stating they are deceptively easy to use. The ability to find and retrieve information effectively is a transferable skill useful for future life as well as enabling the positive and successful use of the electronic resources whilst at university.

RESEARCH METHODOLOGY

Research design

The descriptive survey method is adopted for this study because it seeks to explore the use of electronic resources by faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia. The data have been collected for information about the views of faculties within the College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia.

Population of the study

The estimated population for this study is 176 respondents drawn from faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia. The breakdown of the faculty population is as illustrated in Figure 1.

Sample and sampling technique

Due to the small number of respondents involved the entire (176) populations have been used as the sample for the study.

Research instrument

The questionnaire is titled Use of Electronic Resources at College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia. Questionnaire will be used as the research instrument for this study. The questionnaire will provide data on Use of Electronic

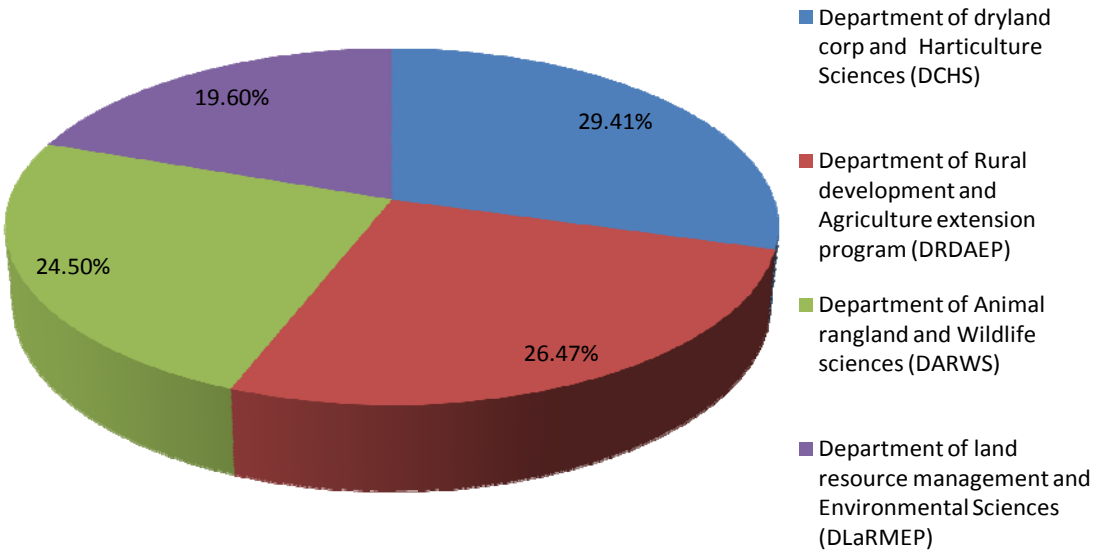

Figure 1. Population of the study.

Resources by the faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia, and it is aimed at answering questions on; the level of ICT skill; the level of electronic resource experience and the Level of electronic resource usage by faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University, Ethiopia.

Method of data collection

The questionnaires were sent out to the faculty members of College of Dry Land Agriculture and Natural Resources, Mekelle University. The researcher employed the service of research assistants to administer the questionnaire one-on-one to the faculties and their responses were collected immediately. This method was preferred so as to achieve a high response rate.

Data analysis

Data collected from the questionnaires were analyzed using frequency counts and simple percentage. A total of 102 (100%) questionnaires were distributed to respondents and were successfully retrieved, giving a 78 (76.47%) rate of return.

RESEARCH FINDINGS

***Research question 1*:** What is the level of computer literacy of College of Dry land Agriculture and Natural Resources teaching faculties?

The result of the analysis is presented in Figure 2.

Figure 2 shows the perceived level of computer literacy among the regular faculty member of College of Dry land Agriculture and Natural Resources, Mekelle University. It was discovered that, the majority 65.38% respondents have 'Average' computer literacy', 30.76% of respondents have 'Above Average' Computer literacy, and the least 3.84% respondents have 'below Average' computer literacy. The skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources. These skills include a knowledge of the structure of the database and the instructions which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another.

***Research question 2*:** What is the purpose of using electronic information sources EIS for College of Dry land Agriculture and Natural Resources teaching faculties?

The result of the analysis is presented in Figure 3.

The respondents were asked to give reasons as to why they use EIS but based on choices fixed by the teaching faculties. Various professionals purposes for which EIS was used were elicited form the respondents. The results are summarized in Figure 3. Majority of the respondents 91.02% reported that they use EIS for the purpose of preparing teaching note. About 74.35 and 53.84% of the respondent use EIS for the purpose of 'ongoing research work' and 'searching subject specific Information' respectively. 60.25% of the respondents use EIS for 'writing research paper' and 30.76% of the respondents are using EIS for the purpose of thesis and project work; around 46.15% of the respondents are using EIS for the purpose of 'exploring the research grant' and 43.58% use it for locating information on funding and donor agencies'. About 30.76% of the respondent use EIS for 'curriculum design' purpose and only 20.51% of the respondents use the same for 'guiding researchers and P.G. students'. It is noted that there is significant use of EIS mainly for 'preparation of teaching notes' and 'ongoing research work' and it is quite natural that the respondents give top

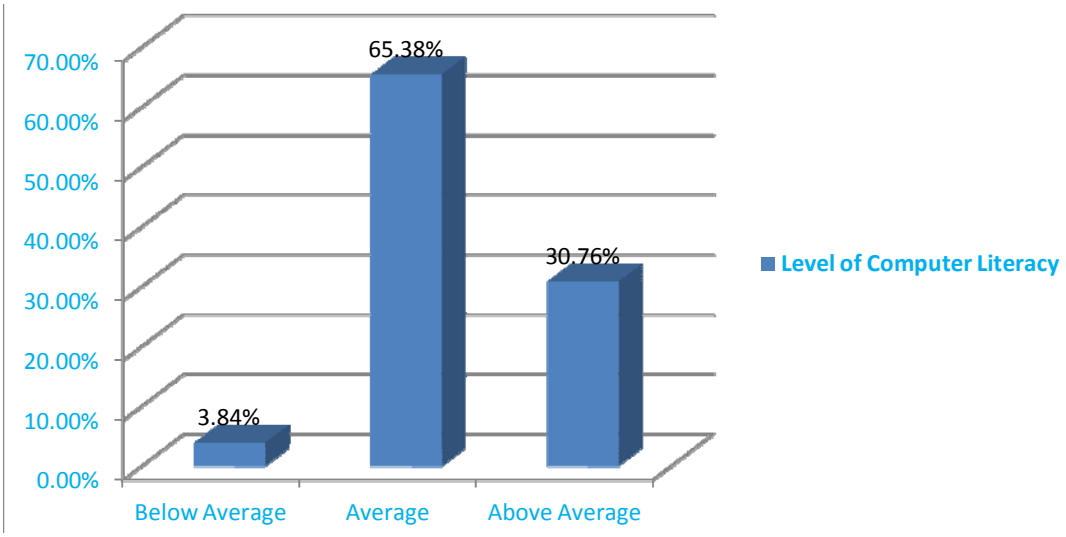

Figure 2. The Level of computer literacy of College of Dry land Agriculture and natural resources teaching faculties.

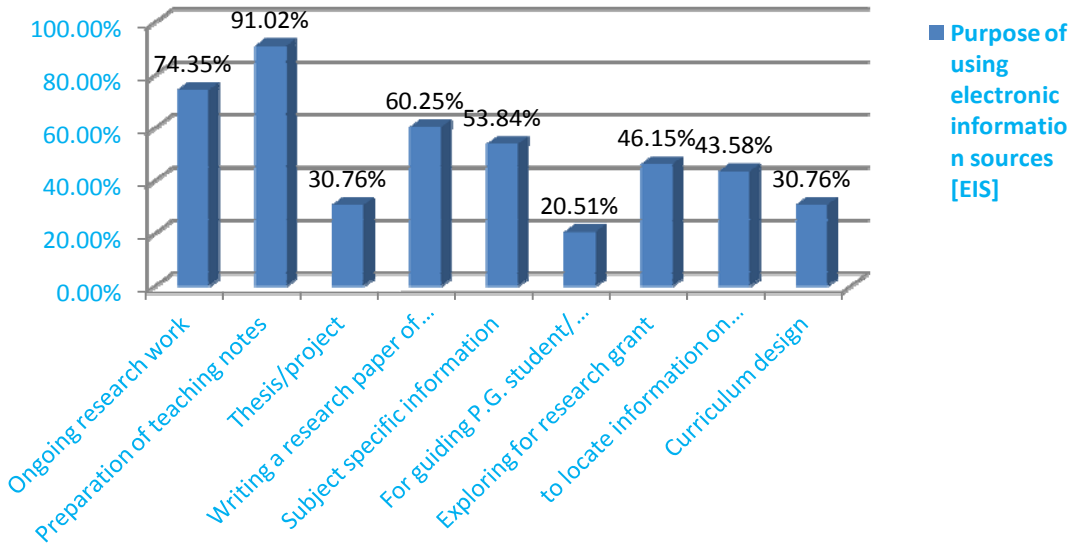

Figure 3. The purposes of using electronic information sources [EIS] among teaching faculties of CDANR.

priority for this purpose. It may be the reason that user can access relevant and updated information speedily than any other information sources.

Research question 3: What is the method of learning to use electronic information sources, by CDANR teaching faculty?

The result of the analysis is presented in Figure 4.

The respondents were requested to mark all the modes by which they learnt to use the EIS. Figure 4 shows the frequencies of responses and respective percentages for the different EIS learning methods. According to their responses, it was found that learning with the assistance of colleagues and friends (38.46%) and self-study (89.74%) are the most popular method of EIS learning among the respondents which was in agreement with Salmon and Renwick's (2002) findings. It was followed by 28.20% of respondents who leant to use EIS through courses offered by their institutions. Another 21.79% respondents learnt by attending formal courses either paid or through official training. Guideline or skills offered by the library (10.25%) play a minor role. That does not mean that the library is regarded as insignificant.

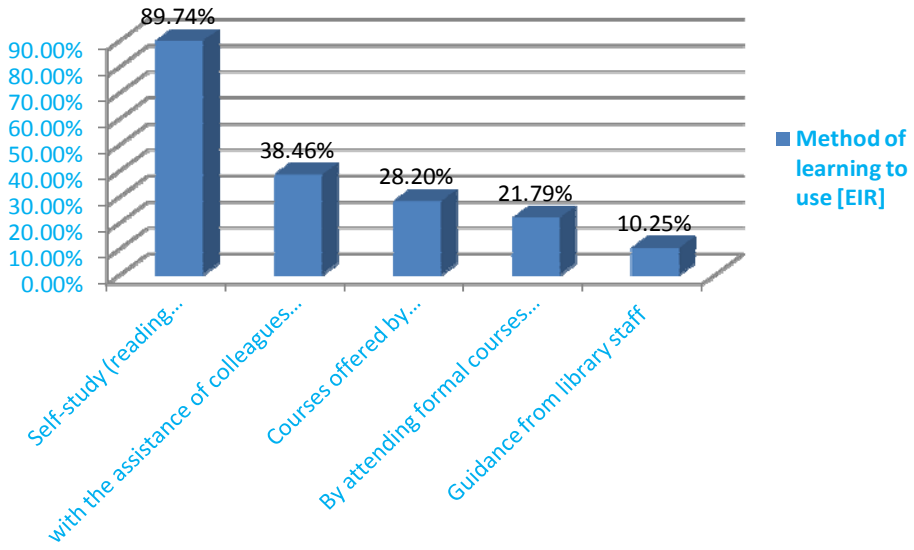

Figure 4. Method of learning to use electronic information sources, by CDANR teaching faculty.

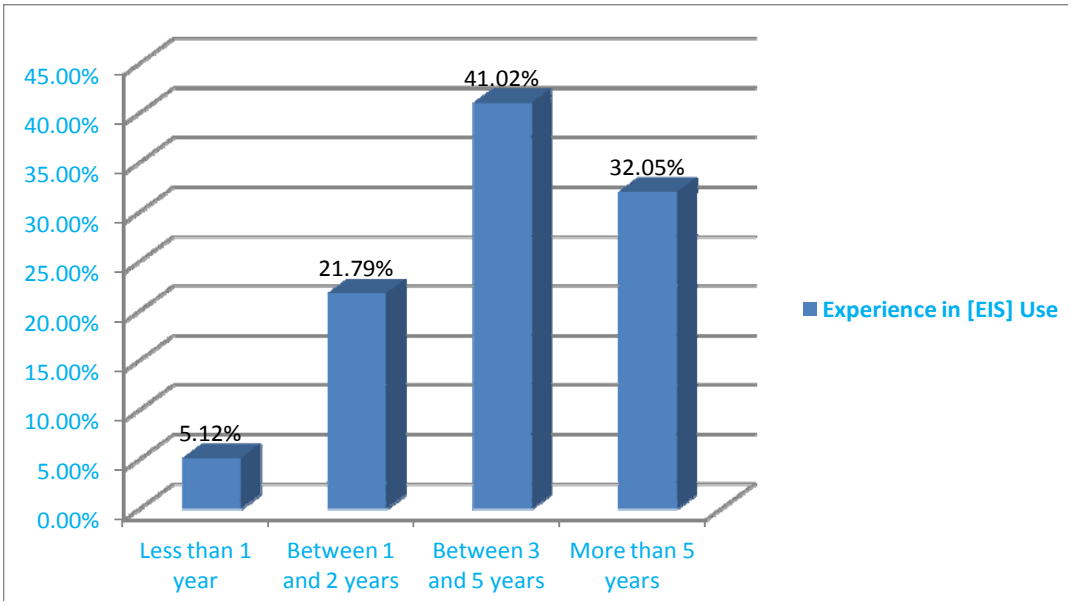

Figure 5. CDLANR teaching faculty experience in EIS use.

***Research question 4*:** What is CDLANR teaching faculty experience in EIS use?

The result of the analysis is presented in Figure 5. Respondents were asked to indicate the number of years of experience they had in using the EIS. Figure 5 summarizes the situation for all the respondents. It is found that 32.05% respondents have been using EIS for more than 5 years and 41.02% respondents have 3-5 years of experience in using EIS. The figure also presents that only 21.79% of the respondents started using the EIS since last 1-2 years and few respondents (5.12%) have less than a year of experience; overall respondents had good amount of experience to exploit optimally the electronic sources and services.

***Research question 5*:** What is the location of CDANR faculty's computer in use of EIS?

The result of the analysis is presented in Figure 6.

The different locations of access for EIS are depicted in

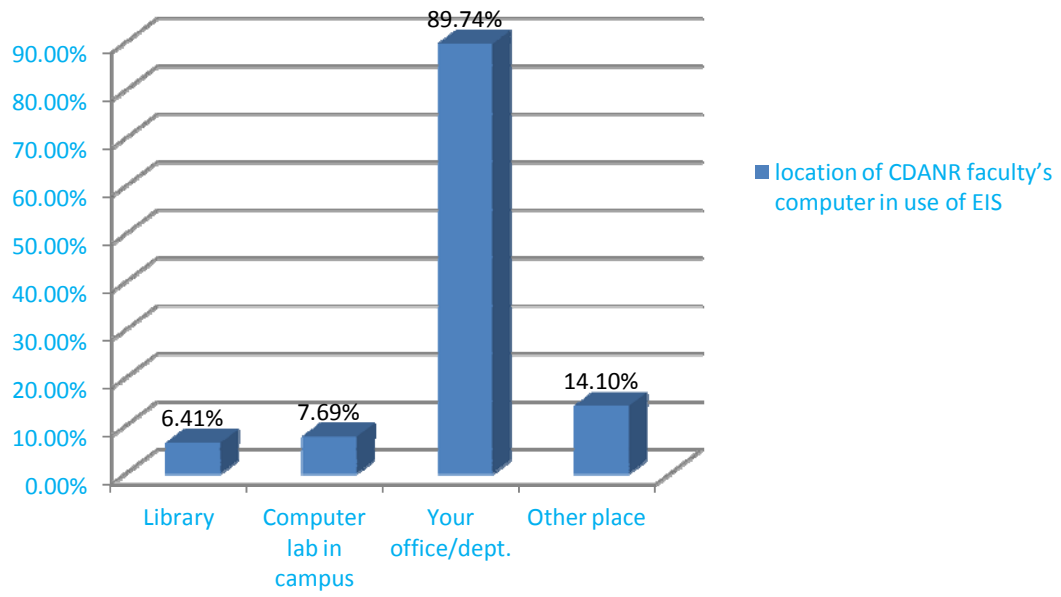

Figure 6. Location of CDANR faculty's computer in use of [EIS]).

Figure 6. About 89.74% of the respondents indicated that they have access to their computer so they use EIS at their department office. While 14.10% of the respondents use EIS at other places e.g. home at down town or at university accommodation. The respondents who chose 'computer lab in campus' and accessed EIS from this location were only 7.69%. And the least 6.41% of the respondents indicated that they use it from the university library. Hence it can be interpreted that respondents are serious users as they access the EIS from different locations. The use of EIS seems to have become inescapable and not confined to one location or venue.

***Research question 6*:** Depict the specific area of access to Agricultural Electronic information sources (EIS)?

The result of the analysis is presented in Figure 7.

In College of Dry Land Agriculture and Natural Resources, Mekelle University the respondents use a variety of electronic Information sources. To ascertain various demands, the respondents were asked to state their subject interest in use of specific type of EIS. Their responses are depicted in Figure 7. From the chart it is clear that, a majority of 74.35% respondents use EIS for their 'Subject specific information website' followed by 39.74% for 'International and regional websites'; and 37.17% use the e-journals. Similarly, 38.46% use the 'research project site' while 30.76% use information on 'professional association websites'. 29.48 and 25.64% of respondents use e-journals and online biographic databases respectively. Only 15.38% of respondents use CD-ROM bibliographic databases. There is no doubt that the internet has assumed the role of providing a medium of scientific information and today's user can no longer depend only on conventional information sources to cope with the latest developments in their respective fields. The internet can provide access to essentially unlimited resources of information in the field of Agriculture as in other disciplines. There are a number of international and regional organizations that have strong information program specially designed to provide services to developing countries. They include Food and Agriculture Organization [FAO], AGORA etc.

***Research question 7*:** What is CDANR faculties frequency and way of obtaining electronic information sources [EIS]?

The result of the analysis is presented in Table 1.

The survey also queried the respondents about the EIS they frequently use. Table 1 lists the five specific electronic sources like, mail, web resources, mailing list/professional groups, Internet relay chat IRC and CD-ROM and the percentage of respondents reporting various levels of frequency of use. It is apparent in Table 1 that e-mail is the most used tool, which is utilized by maximum respondents, and 76.92% of them report using it every day or on daily basis. 11.53% use it 2 to 3 days a week, 2.56% once in a week and 1.28% use it 2 to 3 times a month. Only 2.56 and 5.12% of respondents respectively use it once in a month and occasionally. No respondents' response was for never use because electronic mail is obviously a most compelling and attractive resources for the respondents. All other studies have shown that e-mail has been the most intensively used facility.

Next to e-mail, 'web resource' is the most frequently

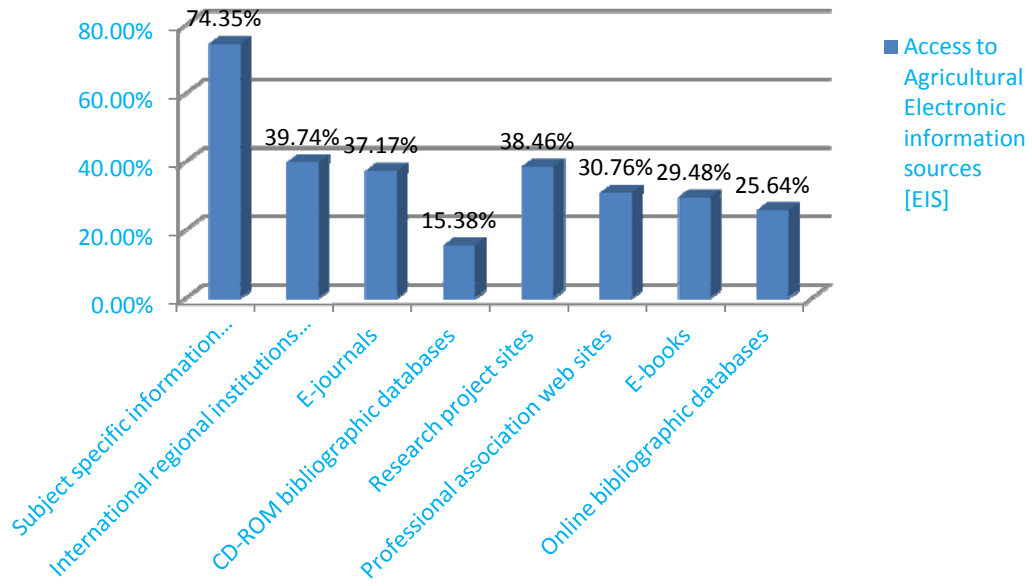

Figure 7. The specific area of access to Agricultural Electronic information sources [EIS].

Table 1. CDANR faculties frequency and way of obtaining electronic information sources [EIS]).

Frequency	How to obtain electronic information resources				
	E-mail	Web	CD-ROM	Mailing list	IRC
Everyday	76.92%	51.28%	0%	3.84%	1.28%
2-3 days/week	11.53%	21.79%	3.84%	1.28%	0%
Once in a week	2.56%	6.41%	14.10%	5.12%	1.28%
2-3 times a month	1.28%	2.56%	8.97%	3.84%	2.56%
Once in a month	2.56%	0%	1.28%	1.28%	1.28%
Occasionally	5.12%	3.84%	2.56%	1.28%	0%
Never use	0%	1.28%	7.69%	3.84%	6.41%

used tool. 51.28 and 21.79% of the respondents use it every day and 2 to 3 days/week respectively. 6.41% use web once in a week and 2.56% also use it 2 to 3 times a month and no respondent use web resources once in a month. 3.84% use occasionally and 1.28% do not use web resources.

About 14.10% of the respondents use CD-Romance in a week. 8.97 and 3.84% of respondents use CD-ROM 2-3 times a month and 2-3 days a week. As well as 1.28 and 2.56% of the respondents use CD-ROM once in a month and occasionally. No respondent use CD-ROM every day and 7.69% respondents marked for never use of CD-ROM. Regarding discipline based 'professional groups/news groups or mailing list' 5.12 and 3.84% of the respondents use once in a week, every day and 2-3 times a month. It is seen that 1.28% of respondents use mailing list 2-3 days a week and same 1.28% use once in a month. Also 1.28% respondents marked for occasionally use of mailing list and it was found that 3.84% of respondents never use the mailing list.' Internet relay chat' IRC is used 2-3 times a month by 2.56% of respondents and 1.28% of respondents use it every day; 1.28% use it once in a week and the same 1.28% use it once in a month; while 6.41% of respondents never use 'IRC'.

All respondents indicated that they used the electronic mail. This is not surprising since e-mail has been said to be the most frequently used internet service worldwide. Web was the second most wildly used EIS as reported in many of the earlier studies. Reported use of 'CD-ROM' also was quite low. The low use of these information sources could be attributed to these critical underlying factors; infrequent marketing of these product, orientation and education to use them by library staff, also may database may be poor in retrieving information needs of the respondents and the limited availability of personal computers and poor connectivity in the university campus.

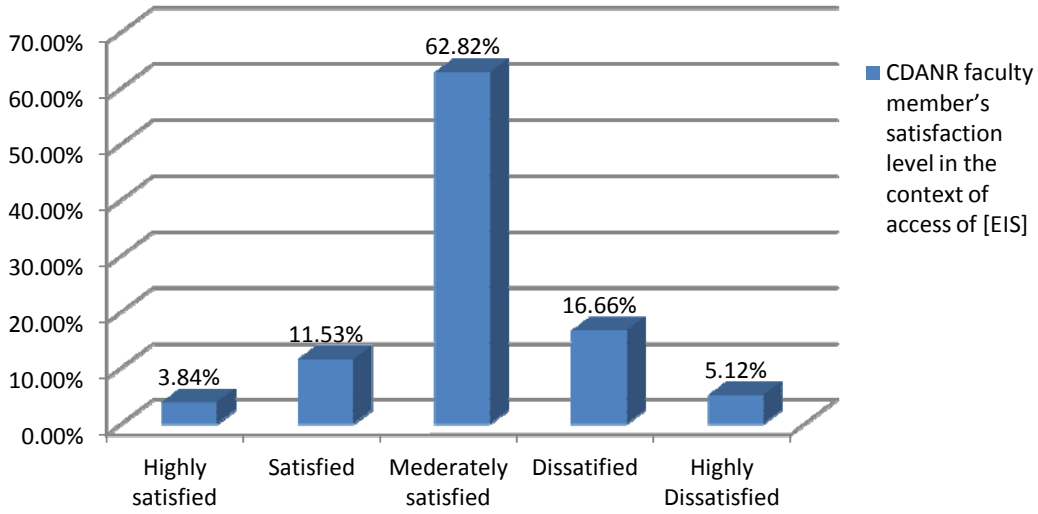

Figure 8. CDANR faculty member's satisfaction level in the context of access of [EIS]).

Research question 8: What is the CDANR faculty member's satisfaction level in the context of access of to electronic information sources?

The results of the analysis are presented in Figure 8.

Present research study respondents were asked about satisfaction with current state of electronic information sources access in their college, which are very important variables to investigate user behavior. The respondents were asked to rate their overall satisfaction with the level of access to EIS use on a five-point scale. The respondents were tremendously positive about the level of access to the use of electronic information sciences. A large majority 62.82% indicated they are moderately satisfied, whereas 16.66% responded for dissatisfaction and only 5.12% indicated for highly dissatisfaction. Also 3.84 and 11.53% marked for highly satisfied and satisfied respectively.

***Research question 9*:** What are the CDANR faculty member's opinions about the benefit of using electronic information sources EIS?

The result of the analysis is presented in Figure 9.

Figure 9 summarizes the percentage of respondents who perceived EIS to be beneficial in their teaching, research and other developmental activities. From the analysis it is evident that a large majority 84.61% of respondents got better access to information by using EIS. Also majority 71.79% of respondents saved their time using EIS, and also 52.56% of the respondents got access to their current data and they could improve their professional competency. Also 42.30% of respondents got access to comprehensive information and decrease in the use of telephone calls. 51.28 and 46.15% of respondents increased professional collaboration with distant collaborators and they decreased in the use of printed sources. And the least 31.17% of respondents decreased their use of post mail.

***Research question 10*:** Which of the following Publisher wise full text databases do CDANR faculty members use for accessing online journals?

The results of the analysis are presented in Table 2

In Table 2 it is evident that, the total 100% respondents use AGORA database journals for their purpose. It is also discovered that, 1.28% of respondents use 'African health information (Pub med.gov), American Institute of Physics, American Physical Society, Cochrane Library (Web), Duke University Press, EBSCO Host, Edinburgh University -direct from EUP, Emerald EM120, Free books for medical doctors, Institution of Engineering Technology (IET), Journal of Human Rights practice, Project MUSE, Royal College of Physicians, Royal Society of Chemistry Archive, Sage IMechE (was PEP), The Ptolemy project, University of Chicago Press. 2.56% of respondents use Acoustical Society of America, AERA SIG Communication of Research, American Chemical Society, American Society of Civil Engineers, HINARI, OARE, PLOS (public library of science), Sage, Scientific Commons, SPIE, Teeal (on LAN) full text databases. it is also discovered that 5.12% of respondents use respectively American Society of Agricultural & Biological Engineers (ASABE), Canadian Science Publishing (was NRC Press), Econport, Mary Ann Liebert, NPG - Palgrave Macmillan Journals, Symposium Journals, World Bank WDI, GDF, ADI, GEM. 12.82% of respondents use CDANR MU subscribed full text databases 'MU Library Online Catalogue (OPAC), Cambridge University Press (CUP), Institute for Operations Research and Management Sciences, Organization for Economic Cooperation & Development (OECD), Oxford University Press E-journals. Table 3 presents that, 15.38 and 23.07% of respondents use

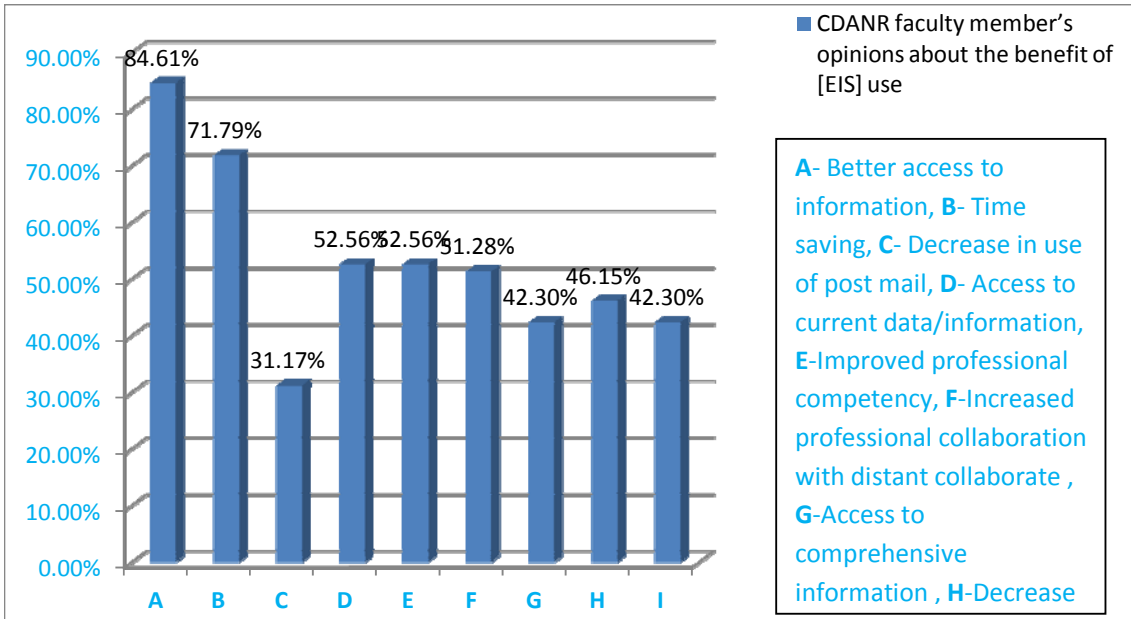

Figure 9. CDANR faculty member's opinions about the benefit of electronic information sources [EIS] use.

Table 2. Use of publisher wise full text databases by the CDANR faculty members.

Sr. No	Name of the publishers wise full text databases	Use
1	Mekelle University Digital Library	15.38%
2	MU Library Online Catalogue (OPAC)	12.82%
3	Acoustical Society of America	2.56%
4	AERA SIG Communication of Research	2.56%
5	African health information (Pub med.gov)	1.28%
6	AGORA	100%
7	American Chemical Society	2.56%
8	American Institute of Physics	1.28%
9	American Physical Society	1.28%
10	American Society of Agricultural & Biological Engineers (ASABE)	5.12%
11	American Society of Civil Engineers	2.56%
12	Annual Reviews	10.25%
13	Cambridge University Press (CUP)	12.82%
14	Canadian Science Publishing (was NRC Press)	5.12%
15	Cochrane Library (Web)	1.28%
16	Conrnel University Library	3.84%
17	Directory of Open Access Books.	8.97%
18	DOAJ(Directory of Access Journals)	10.25%
19	Duke University Press	1.28%
20	EBSCO: NISC Databases	3.84%
21	EBSCO Host	1.28%
22	Econport	5.12%
23	Edinburgh University -direct from EUP	1.28%
24	Emerald EM120	1.28%
25	Free books for medical doctors	1.28%
26	The International Publishers Association (IPA)	6.41%
27	Gale CENGAGE Learning	0%
28	Geological Society	3.84%

Table 2. Contd.

29	HINARI	2.56%
30	Institute for Operations Research and Management Sciences	12.82%
31	Institute of Electrical and Electronics Engineers (ASPP, POP)	0%
32	Institute of Physics Journals	0%
33	Institution of Engineering Technology (IET)	1.28%
34	International journal of Teaching and Learning in Higher Education	11.53%
35	IOP science (journals from Institute of physics)	0%
36	Journal of Human Rights practice	1.28%
37	JSTOR	10.25%
38	Mary Ann Liebert	5.12%
39	NPG – Nature	6.41%
40	NPG - Palgrave Macmillan Journals	5.12%
41	OARE	2.56%
42	On-line books	23.07%
43	Open Access Dissertations and Theses (PQDT Open)	11.53%
44	Optical Society of America (OSA)	0%
46	Organization for Economic Cooperation & Development (OECD)	12.82%
47	Oxford University Press E-journals	12.82%
48	PLOS(public library of science)	2.56%
49	Policy Press	6.41%
50	Project MUSE	1.28%
51	Royal College of Physicians	1.28%
52	Royal Society	8.97 %
53	Royal Society of Chemistry	0%
54	Royal Society of Chemistry Archive	1.28%
55	Sage	2.56%
56	Sage IMechE (was PEP)	1.28%
57	Scientific Commons	2.56%
58	SPIE	2.56%
59	Springer Basic Package 1349 titles	10.25%
60	Springer Lecture Notes in Computer Science series (per institution)	7.69%
61	Symposium Journals	5.12%
62	Taylor & Francis Journals	8.97%
63	Teeal (on LAN)	2.56%
64	The Ptolemy project	1.28%
65	University of Chicago Press	1.28%
66	University of Wollongong	0%
67	WHO for Africa (world health organization)	6.41%
68	Wiley Online Library full collection (1,360 titles)	7.69%
69	World Bank e-library	3.84%
70	World Bank WDI, GDF, ADI, GEM	5.12%

Mekelle University Digital Library and online books from CDANR MU Library web portal. It was also found that 10.25% of respondents use Annual Reviews, DOAJ (Directory of Access Journals), JSTOR, Springer Basic Package 1349 titles and 3.84% of respondents use different types of database as follows: Conrnel University Library, EBSCO: NISC Databases, Geological Society, Geological Society. Table 3 also depicted that 8.97 and 11.53% of respondents use the following databases respectively: ‘Directory of Open Access Books, Royal Society, Taylor & Francis Journals and International journal of Teaching and Learning in Higher Education, Open Access Dissertations and Theses (PQDT Open). 6.41 and 7.69% of respondents used the following database respectively: The International Publishers Association (IPA), NPG – Nature, Policy Press, WHO for Africa (world health organization) and Springer Lecture Notes in Computer Science series (per institution), Wiley

Online Library full collection (1,360 titles). Researcher also discovered that no CDANR teaching faculty member ever used the following databases; Gale CENGAGE Learning, Institute of Electrical and Electronics Engineers (ASPP, POP), Institute of Physics Journals, IOP science (journals from Institute of physics), Optical Society of America (OSA), Royal Society of Chemistry, and University of Wollongong. In this context, discovered responses about e-databases use are highly important for e-resources management in Mekelle University.

Major finding

1) The majority of 65.38% regular teaching faculties have average skill of computer application and the least 3.84% faculties are below average level computer skill at college of Dry land Agriculture and Natural Resources Mekelle University.
2) The majority of 91.02, 74.35 and 60.25% of faculty members of CDANR are using EIS electronic information sources for preparation of teaching notes, ongoing research work and writing a research paper of publication and the least 20.51% of teaching faculties use EIS for guiding P.G. student/ researchers.
3) 89.74% of respondents learn to use EIS through self-study (reading books/articles tutorials etc.) and the least 10.25% of the respondent learn through guidance from library staff.
4) The majority 41.02% of respondent have experience in EIS use between 3 and 5 years, and the less 5.12% of respondents using EIS less than one year.
5) 89.74% of respondents were using EIS in their office in Mekelle University and the least 6.41% of the respondents were using EIS in University Library.
6) 74.35% of respondents mentioned 'Subject specific information websites as a specific area of access to Agricultural Electronic information sources (EIS) and in this context the smallest 15.38% of respondent marked for CD-ROM bibliographic databases.
7) It has been discovered that the frequency of using EIS, 76.92% of respondents were obtaining EIS through e-mail every day, 51.28% of respondent obtaining EIS through web every day. In this context it was also discovered that 14.10% respondents were obtaining EIS through CD-ROM once in a week and 5.12% of respondent were obtaining EIS through mailing list once in a week. It was also found that only 2.56% of respondents were obtaining EIS through IRC, 2-3 times a month.
8) It was found that the majority of 62.82% respondents were' moderately satisfied', 3.84 and 11.53% of respondents were 'highly satisfied' and 'satisfied' respectively. 16. 66 and 5.12% of respondent were 'dissatisfied' and highly 'dissatisfied'.
9) Majority 84.61% of respondents marked 'a better access for information' in the context of EIS benefit.
10) A total number 100% of respondents use AGORA full text databases for their information need.

Conclusion

The advent of electronic information and communication setting has provided academic community of the College of Dry land Agriculture and Natural Sources with the wide opportunity to satisfy their Information need. It is observed that CADNR, Mekelle University Libraries are switching over to electronic sources at an accelerated pace. Printed resources are supplemented by electronic databases, e-journals, and a variety of other media. Respondents are using e-mail as cheaper alternatives to telephone calls and postal services in term of speedy delivery. When the users were probed about the possible constraint, retrial of irrelevant information, poor connectivity, and poor database searching skills were figured as significant pointer to the current state of affairs. The findings of this study have provided useful insights for the library management to take necessary step to strengthen the existing electronic resources and services and to maximize the use of EIS among the College of Dry land Agriculture and Natural resources academic community.

Suggestions

Based on the findings of the study, the following suggestions are put forward to improve the use of electronic information sources among the teaching community of College of dry land Agriculture and Natural resources.

1. In order to eliminate the slow pace of internet connectivity it can be suggested to increase the bandwidth and making available computers with latest processors as terminals for EIS use.
2. Number of computer terminals with EIS accessibility must be installed and repair the non-working computer systems in each teaching faculty office for their regular use of e-sources.
3. Annually, University Library staff should organize orientation training program so that all the teaching community of CDANR, MU can learn how to use the EIS which are available on MU web portal.
4. It is also suggested that, more number of Agricultural electronic resources should be subscribed and make available on Mekelle University Library Web portal. As well as information regarding popular and latest web sites with their address should be displaced on University Library web, library notice board and computer lab.
5. It is also suggested to allocate more funds to subscribe many EIRs in Agriculture discipline to provide quality electronic resources services to College of dry land Agriculture and Natural Resources, Mekelle University, teaching community.

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