1 **Use of Electronic Information Resources by Undergraduate Students**

2 **in the Faculty of Management and Administration at Africa University,**

3 **Mutare, Zimbabwe**

4 **Abstract**

5 *This study was carried out at Africa University, Mutare, Zimbabwe. It sought to evaluate*
6 *the usage of Electronic Information Resources by undergraduate students in the Faculty*
7 *of Management and Administration at Africa University. Data was collected through*
8 *questionnaires from undergraduate students in the Faculty of Management and*
9 *Administration at Africa University. The methodology used was a descriptive survey*
10 *while the sampling technique used was purposive. The observation technique was used*
11 *to observe the information seeking behavior of the students and the type of information*
12 *they frequently consult. The study established that there was a low usage of Electronic*
13 *Information Resources by undergraduate students in the Faculty of Management and*
14 *Administration because of slow and unreliable Internet connection, insufficient number*
15 *of workstations in the Library, lack of awareness of some of the databases, lack of*
16 *information technology skills and lack of practical skills to navigate the e-resources*
17 *caused by limited practical lessons in the information literacy skills course. From the*
18 *findings of this study, it can be recommended that the Library should ensure that there*
19 *are sufficient networked computers with fast Internet connectivity, making sure that*
20 *subscribed electronic databases are relevant, teaching students information technology*
21 *skills, making information literacy skills training practical and interactive and make sure*
22 *that the students are aware of all subscribed electronic information resources provided*
23 *by the Library. Finally, from the findings it can be concluded that students lacked adequate*
24 *hands-on skills required to retrieve information from subscribed electronic information resources*
25 *hence low usage.*
26

27 **Keywords** Information Literacy, Electronic Information Resources, E-Resources, Higher

28 Education, Developing Countries, Zimbabwe

29 **1. Introduction**

30 Electronic resources refer to those materials that require computer access, whether through a

31 personal computer, mainframe, or smart technologies. They may either be accessed remotely

32 via the internet or locally. Ray and Day, (1998) state that "students are increasingly expected to

33 use electronic resources while at university". IFLA (2012:30). Some of the resources include e-

34 books and electronic journals among others. Dhanavandan and Tamizhchelva (2012:421)

35 defined an e-resource as a resource which requires computer access or any electronic product

36 that delivers a collection of data, be it text referring to full text databases, electronic journals,

37 image collections, other multimedia products and numerical, graphical or time based, as a

38 commercially available title that has been published with an aim to being marketed.

39 Electronic information forms an integral part of libraries assisting users in learning, teaching

40 and research. Dadzie (2007) argues that electronic resources are invaluable research tools that

41 complement the print – based resources in a traditional library setting. Further, Vasishta, (2011)

42 argues that "e-journals have emerged as vital components of information resources of a library

43 and play an imperative role in the distribution of prime information". Dadzie (2007) also state

44 that the advantages of e-resources include; access to information that might be restricted to the

45 user due to geographical location or finances, access to more current information, and provision

46 of extensive links to additional resources related contents.

47 Furthermore, Naik (2009) states that "the potentiality of the e-resources are huge, do not occupy

48 physical space, elimination of time, space, cost limit, easy archiving of the content and

49 organized subjectively and available 24 hours a day, 7 days a week, among others" The

50 advantages of electronic resources have prompted university libraries to provide electronic

51 resources in order for them to meet users' needs. Ukachi, (2015) state that "Electronic

52 Resources are an important element for the academic community as they enable users to

53 access up-to-date information in the right format without expending much time". Wu and Chen,

54 (2011) argue that "Electronic resources are convenient to access, easy to search, and

55 downloadable".

56 A recent study at the University College Hospital (UCH) Ibadan, Nigeria revealed that the level

57 of usage of the electronic information resources is not high. A major problem identified was lack

58 of information retrieval skills for exploiting electronic resources, thus making the level of usage

59 of resources by medical students very low (http://digitalcommons.unl.edu)   Ani (2010:560)

2

60 found that although the internet is extensively used by undergraduate students in Nigerian

61 universities, the use of electronic resources such as the electronic journals and online

62 databases by them was poor. Further, Ukachi, (2015) argues that "Electronic resources are

63 grossly under-utilised by undergraduate students despite their availability in libraries".

64 Africa University Library (the Jokomo / Yamada Library) has managed to put in place electronic

65 information resources for its clients, maintains access tools and also imparts lifelong skills

66 through information literacy skills training and also promotes electronic resources. However, the

67 usage of electronic resources at the Jokomo / Yamada Library is still low. The Jokomo /

68 Yamada Library is spending a lot of money in subscription and management of these electronic

69 resources therefore they should be fully utilized. It is not known why there is such low usage of

70 these resources in the University whose student population is close to 3000. Despite making

71 efforts to facilitate use of the resources, still electronic information resources are not effectively

72 utilized and some are not used at all. Therefore, it is necessary to know why there is low usage

73 of electronic information resources among Africa University undergraduate students. A lot of

74 money is being spent in purchasing or subscribing to various electronic information resource

75 packages. If the problem is not addressed the institution will continuously waste resources on

76 unused information. As such this study sought to investigate causes of low usage of electronic

77 information resources by undergraduate students at the Africa University.

78

79 **1.2 Objectives of the Study**

80 The objectives of the study were to:

81   I.   To investigate the purpose for which undergraduates students use electronic resources;

82   II.   To identify the impediments faced by clients while accessing and using electronic

83   resources;

84   III.   To examine the relevance of electronic resources offered by Africa University Library,

85   and;

86   IV.   To examine the adequacy of information literacy skills training offered to undergraduate

87   students at Africa University.

88   **2.0 LITERATURE REVIEW**

89   **2.1 Defining Electronic Information Resources and Factors Affecting Use**

90   According to the International Federation of Library Associations and Institutions (IFLA),

91   "Electronic resources" refer to those materials that require computer access, whether through a

92   personal computer, mainframe, or handheld mobile device. They may either be accessed

93   remotely via the Internet or locally. Some of the most frequently encountered types are: e-

94   journals, e-books, full-text (aggregated) databases, indexing and abstracting databases,

95   reference databases (biographies, dictionaries, directories, encyclopedias, etc.), numeric and

96   statistical databases, e-images, e-audio/visual resources. (IFLA, 2012:34)

97   Ray and Day (1998) claims that students cite timely availability, easy access and full text

98   searching as factors that promote the use of electronic journals. Dutton (1990) state that the

99   skills required to maximise the potential of electronic resources are much greater than those

100   required for searching printed sources. These skills include a knowledge of the structure of the

101   database and the instructions which must be input into the computer by the searcher, as well as

102   an understanding of the ways in which the instructions are linked with one another. Brophy,

103   (1993) states that students do not often appreciate the skills required to search these sources.

104   Furthermore, Brophy argues that the ability to find and retrieve information effectively is a

105   transferable skill useful for future life as well as enabling the positive and successful use of the

106   electronic information resources whilst at university.

107   **2.2 Use of Electronic Books by Undergraduate Students**

4

108   The integration of e-books in academic libraries is beneficial as they are remotely accessible

109   and available around the clock, potentially can lead to saving physical space in the library,

110   prevention from book lost and damage, and easier integration to Virtual Learning Environments

111   (VLEs). While the majority of the U.K.'s undergraduate students are now using e-books, none

112   are yet relying on them as a primary source of information (www.teleread.com). A study by

113   Ismail and Ngah (2005:15) at the Faculty of Computer Science and Information Technology at

114   the University of Malaya, Kuala Lumpur found low usage levels mainly because students

115   preferred to use printed books and lacked knowledge on how to use e-books. Anuradha and

116   Usha (2006:53) investigated the use and usability of e-books from users' perspectives in an

117   academic and research environment at the Indian Institute of Science. The study found that e-

118   book usage was very low although students tended to use e-books more than other faculty

119   members and staff.

120   **2.3 Use of e-Journals by Undergraduate Students**

121   Grefsheim et al (1991:38) argues that students show an increased reliance on online databases

122   and electronic resources, especially when the products are made available by libraries at no

123   cost. A recent study at Princeton on e-journals revealed that the smallest percentages of both

124   users and non-users were - curiously - the undergraduates. (http://www.stsci.edu/) This implies

125   that few undergraduates were using e-journals. However, major problems faced by

126   undergraduate students towards the use of journals are; types of journal publications available

127   to them, problem of awareness of the importance of journals by undergraduate students, lack of

128   acquisition of current journals in different areas of specialisation, and lack of organization of

129   journals in subject area for undergraduate students. (http://article.sapub.org/).   Electronic

130   information resources at Africa University are well organized and are accessible both on

131   campus and off campus through the website.

132   **2.4 Challenges in the Use of Electronic Information Resources**

133   Electronic information resources are underutilized in many universities because of various

134   reasons. Ndinoshiho (2010:60) found that many electronic resources were substantially under-

135   utilized by undergraduate nursing students at the University of Namibia's Northern Campus. The

136   main barriers identified were the shortage of computers, unreliable internet connections and

137   lack of skills. A recent study by Islam et al (2011) revealed that some students at Dhaka

138   University were unaware of the existence of the journals in the University Library. This study

139   reported lack of knowledge and awareness of e-journals among students and faculty members;

140   lack of adequate fund allocation to subscriptions; lack of knowledge about the links to e-

141   journals; lack of computer skills; lack of adequate computer lab facilities; and lack of training and

142   orientation programs as some of the major challenges to e-journal usage. Some persistent

143   challenges, namely bandwidth and funding, continue to affect e-resources usage. The high cost

144   of bandwidth remains a major challenge that still hampers the full utilization of e-resources and

145   when users do literature searches and/or try to download articles but find the Internet slow,

146   some of them give up, and this affects usage. (http://med.mak.ac.ug/3/study.htm)   Ali

147   (2005:695) states that "Lack of printing facilities, terminals and trained staff are the major

148   reasons that would discourage users from accessing the electronic information services. Ali also

149   state that … "users face difficulties while browsing e-resources". Finally, Harle (2010), suggests

150   that substantial barriers to electronic resources access and use include a lack of research

151   culture.

152

153   **2.5 Information Literacy Skills Training**

154   Ukachi, (2015) argues that "the benefits that organizations and institutions reap from the

155   investments in information technologies and electronic resources are influenced by the extent to

156   which users posses the required information literacy skills necessary for utilizing them". Ukachi

157   further argues that "It is very important that one should be conversant with the use and

158   exploitation of electronic resources by being information literate in order to achieve a quicker

159   and more effective usage". Gaining skills in information literacy multiplies the opportunities for

160   students' self-directed learning, as they become engaged in using a wide variety of information

161   sources to expand their knowledge, ask informed questions, and sharpen their critical thinking

162   for further self-directed learning (Grassian, 2004:52) Fourie and Fourie, (2013) state that "Even

163   if information literacy skills are hailed as essential lifelong skills in line with many other digital

164   skills, there is limited opportunities for students to refine and truly master the skills doing a few

165   assignments that might require them to refine and truly master the skills to search for

166   information". Ferdows and Ahmend (2015) argue that "Universities need to develop a well-

167   defined course curriculum that encompasses all of the skills and competencies that could help

168   undergraduates to be competent in the use of various online resources".

169   **1.0 RESEARCH METHODOLOGY**

170   **3.1 Research Design**

171   To meet the objectives of the study a qualitative (descriptive survey) method was adopted. A

172   qualitative research design was used to bring the researcher and the respondents together and

173   help the researcher to have in-depth understanding of variables under study. According to

174   Bailey (1987) such a design allows an easy description and interpretation of people's opinions.

175   This design was also found cheap and therefore it reduced the financial constraint without

176   negatively affecting the quality of the research. Creswell (2007) states that this research

177   approach provides an effective strategy to increase validity of research. Neuman   (2006:2

178   defines   'methodology' as a broader term that encompasses 'method' and "design" even

179   though the two terms are often used interchangeably. The two authors view research design as

180   a set of procedures and methods used to conduct research. Blumberg (2005) defines research

181   design as an activity driven by research questions or objectives. The researchers used the

182   research design to specify the relationships. The design helps the researchers in this study in

183   the allocation of limited resources as it clarifies major choices whether the researcher will be

184   quantitative or qualitative or both, choice of research, data collection instruments, population,

185   sample, sampling frame.

3.2 Population, Sample, and Sampling Procedures

In defining a population, the researcher specifies the sample group, geographical location and boundaries of the population being targeted (Neuman, 2006). (Mugenda and Mugenda, 2003) defined the target population as that population to which a researcher wishes to generalize result of a study. The target population for this study was undergraduate students at Africa University. These students were selected as the study population because they had just received information literacy skills training and were expected to use electronic resources for their coursework assignments and research. This approach was appropriate because the study explored the effectiveness of the information literacy skills course in motivating and equipping students to use electronic resources at Africa University. Purposive sampling method which is a non-probability sampling technique was used to select the sample for the study. Mugenda and Mugenda, (2003) states that purposive sampling technique allows a researcher to get cases that have the required information with respect to the objectives of the study. Researchers sampled 70 undergraduate students from the Faculty of Management and Administration from a total population of 200 students as a representative for all Africa University undergraduates. The sample was chosen on the basis of the feasibility for the research to get information from that particular group of participants.

3.3 Research Instruments

A questionnaire-based survey method was used for the study. A structured questionnaire was developed for data collection. For closed questions respondents were requested to tick the answer they think is the most appropriate. Suggested answers were provided to enable

systematic analysis of data. Open-ended questions were also used to seek those details, which the researcher had little knowledge about. In this study a questionnaire were used because they are generally cheap to administer and the questionnaire allows the researcher to guide participants along lines of thought. Further, the questionnaire was used because it offers respondents the flexibility of filling in the questionnaires at their own convenient times and has enough time to think about their responses, and anonymity of respondents will be assured.

3.4 Observations

The researcher observed students' use of print and electronic information resources in a natural setting to compliment the questionnaires that were used to collect data. The observation was mainly focused on the use of online databases, electronic journals, the internet, WebPAC (web accessed catalogue) and institutional repository resources on the Digital library such as past examination papers, scholarly articles and dissertations.

3.5 Data collection Procedures

The researcher delivered the questionnaire in person. An appointment date and time was set for the collection of the questionnaires in order to lessen the burden on the respondents of getting hold of the research instrument once they have completed filling in the questionnaire. This also helped to ensure that the questionnaire got into the hands of the intended respondents.

3.6 Data Presentation and Analysis Procedures

 All questionnaires were checked for completeness and irrelevant data was discarded while relevant data was consolidated for analysis. Questionnaires were also counted so as to determine the response rate. Data was extracted and recorded in a spread sheet and processed. The data was then analyzed by making use of percentages and interpreted. The

data amassed in this research was presented through the use of illustrative methods that included bar graphs, pie charts and texts. The use of these presentation methods were justified because they are easy to understand and also give a clear depiction of trend and clearly illustrate a summary of the information gathered.

4.0 FINDINGS

The presentation, analysis and interpretation of data are according to the research objectives

4.1 Survey Results

4.2 Response Rate

The response rate from questionnaires was excellent (93% response rate to the questionnaire) and provided basis for reasonable conclusion. Out of 70 questionnaires distributed 65 were completed and returned representing 93% response rate.

Databases Used by Undergraduate Students in the Faculty of Management and Administration

Fig. 1 Pie Chart showing responses on the Use of different Databases by Undergraduate Students in the Faculty of Management and Administration (FMA)
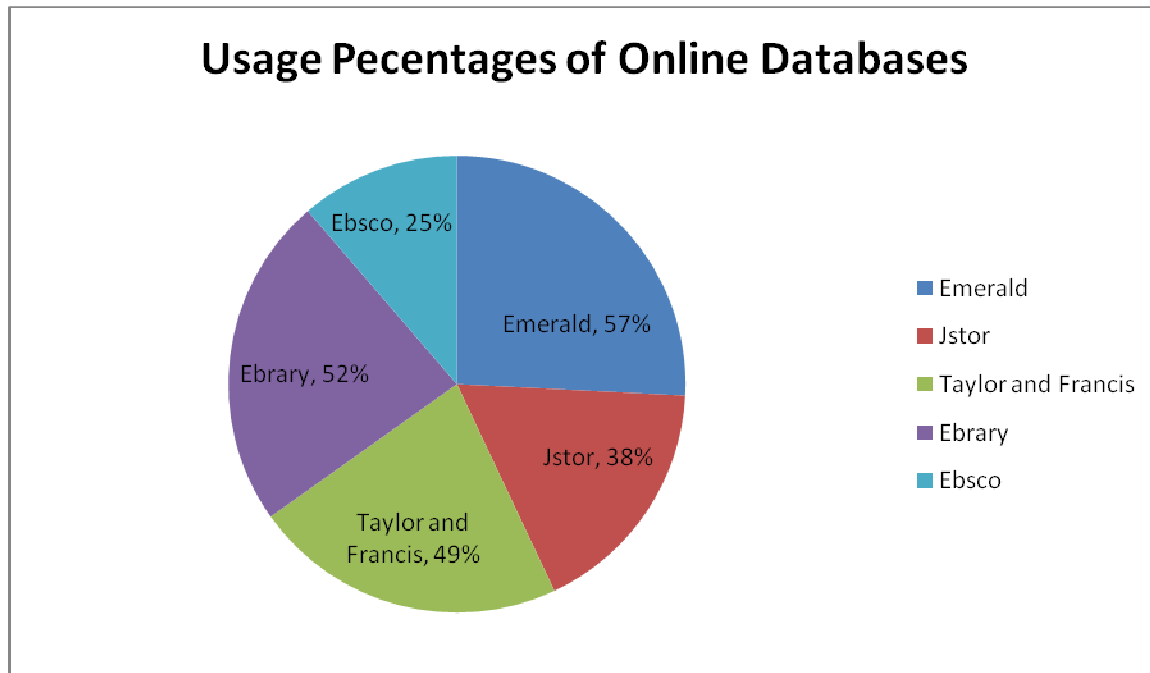

Survey data has demonstrated how often users have utilized the various online databases. Usage percentages of online databases were presented in Figure 1 above. Only two databases have shown at least 50% or more usage, namely, Emerald and Ebrary. The usage percentage of Emerald was 57% while Ebrary Database was at 52% with Taylor and Francis slightly below half with 49%. All the other databases had much lower usage, for example, JSTOR had (38%) and EBSCO 25%. Other online resources that were used by the participants were the Digital Library (AUDil) which hosts the Institutional Repository. Respondents also revealed that they used Wikipedia and Google search for information retrieval. Researchers also observed that over 60% of the respondents preferred to use Google Search Engine when searching for information. This was characterized by their frequent use of Google as compared to the subscribed electronic information resources. This finding is confirmed by a recent study by

Ferdow and Ahmend (2015) that discovered that many students do not use the university-subscribed online resources"

Further, the low usage of the online database could be attributed to the fact that the lecturers were not recommending the students to use the databases. This was observed from reading lists given to students by lecturers. It was also noted that on the recommended lists used by the students who visited the library to search for information resources, there were no mention of any of the electronic information resources subscribed by Jokomo /Yamada Library. The use of the database would have been high had the lecturers recommended their use. Above all, undergraduate students have not still realized the importance of online resources due to their lack of experience in conducting academic research using online resources. Furthermore, users' traditional attachment or fixation with print materials may also have affected the usage level of online resources.

4.2 Purpose for which Undergraduate Students Use Electronic Information Resources

Fig 2 Column graph showing responses on the purposes for which Undergraduate Students Use Electronic Information Resources
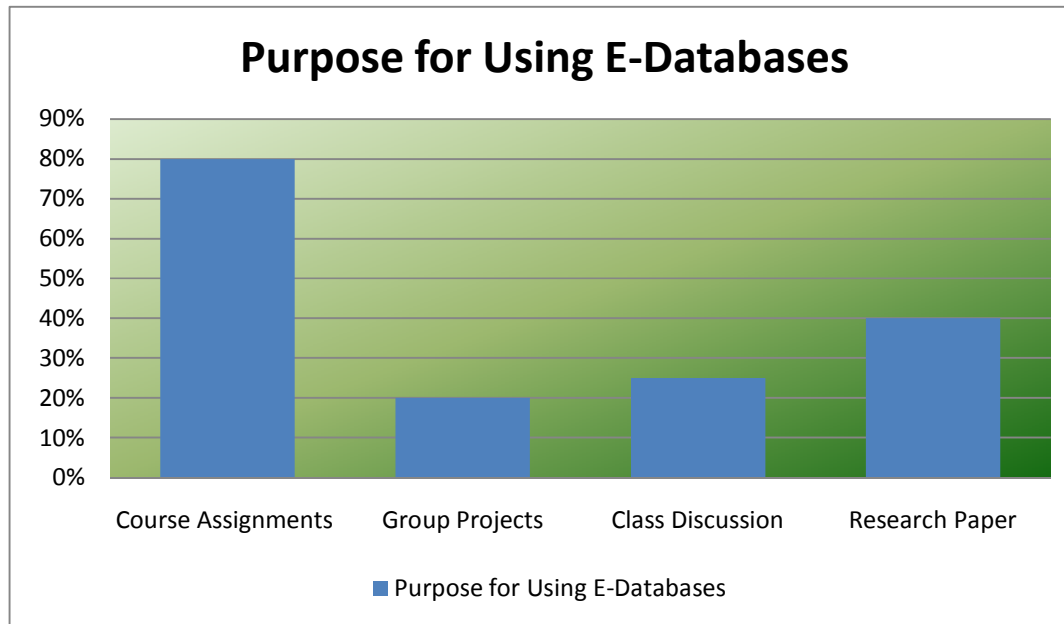
The use of electronic information resources by undergraduate students is growing steadily as e-resources provides a vast amount of information on a high speed and real time. Findings indicate that students used e-resources for various reasons; some used e-resources for one or more reasons. Eighty percent (80%) of the respondents indicated that they used e-resources for course assignments, 20% for group projects, 25% for class discussion and 40% for research paper. Further, this finding is in agreement with findings by Seamans, (2002:115) who reported that the information needs of the first-year undergraduate students primarily concentrated on their academic coursework since they had little need to look for information beyond what is needed in their courses".

4.3 Challenges Faced by Undergraduate Students when Accessing and Using Electronic Information Resources.

Table 3 Responses on Problems faced by Undergraduate Students in Accessing e-Resources

Problems faced in Accessing e-Resources	Number of Respondents	Percentages (%)
Insufficient number of workstations in the Library	26	40%
Lack of information technology skills	13	20%
Slow or unreliable Internet connection	46	70%
Irrelevant information in databases	7	10%

A number of factors affected usage of electronic information resources by undergraduate students at Africa University and these include slow or unreliable network, inadequate information technology (IT) skills, and irrelevant information in databases and insufficient workstations in the library. The most common and major challenge was slow or unreliable Internet connection (70%). Forty percent of the respondents mentioned insufficient number of workstations in the Library, lack of IT skills (20%) and irrelevant in information databases (10%). However, other challenges were highlighted that had negative impact on the usage of e-resources and they included lack of awareness of e-resources, difficulties in reading from the computer screen, complex searching mechanisms and others mentioned that they were asked to purchase some articles, e-books or research papers within subscribed databases as a result they failed to access them because of information ambargoes.

Further, it was observed that most of respondents preferred to use Google Search Engine as they claimed that it was relatively fast and easy to use. It was also observed that most of the Lecturers recommend students only to print information resources as this was reflected by their recommended lists. Students therefore thought print resources are the only important information resources. This had a negative impact on the use of electronic resources. Findings in Table 3 show that lack of adequate information retrieval skills is also a major challenge affecting effective and efficient utilization of electronic information resources. This result is in

agreement with Ferdows and Ahmend (2015) who state that "It is the lack of adequate skills which might inhibit students' success with electronic resources".

4.4 Relevance of Electronic Information Resources to Undergraduate Courses

Fig.3. Line Graph showing Responses of Participants on Rating the Relevance of Electronic Information Resources Frequently Consulted
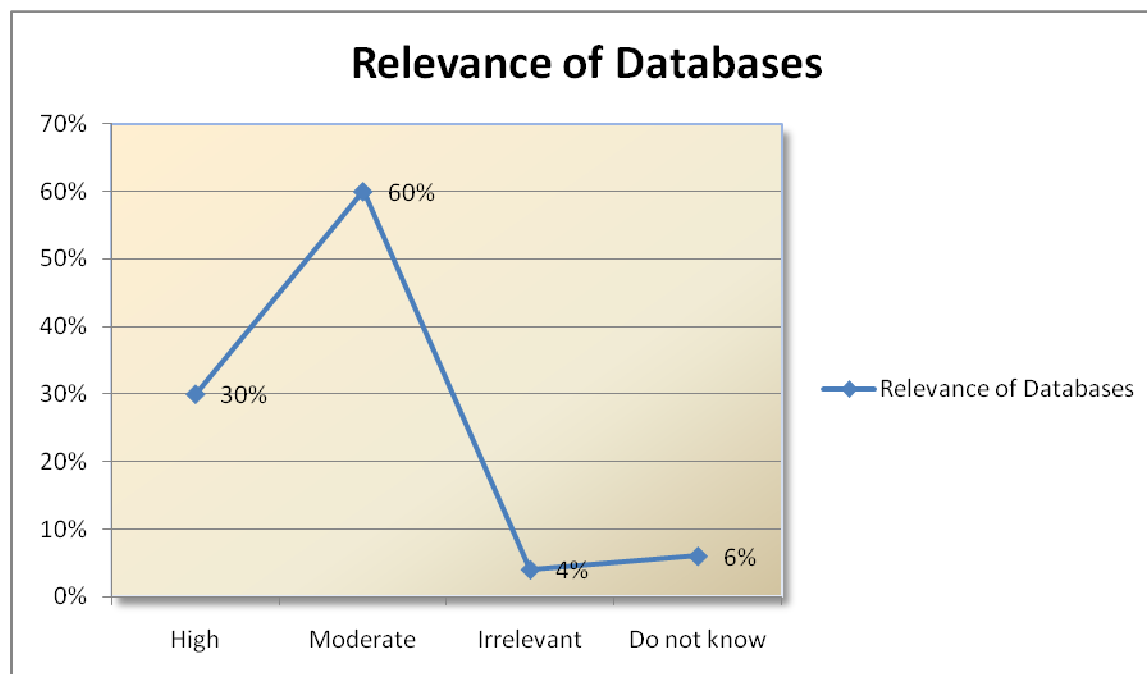

Most of the electronic databases offered by the Jokomo /Yamada Library are provided by INASP and are relevant to undergraduate programs however various responses were given in the survey. 20 participants (30%) responded that the databases were highly relevant and 39 respondents (60%) were of the notion that databases were moderately relevant. Even though the majority stated that the databases were moderately relevant, 4% indicated that the databases were irrelevant and 6% stated that they do not know. Further, respondents also suggested that more electronic information databases that cover a wide range of subjects need to be subscribed to. Additionally, respondents indicated that some of the information they get

from the subscribed databases is not current.

4.5 Adequacy of Information Literacy Skills (ILS) in Equipping Students to Use Electronic Information Resources

Fig. 4 Bar graph showing the Responses of Participants on whether the ILS training had equipped them to fully utilize the Electronic Databases.
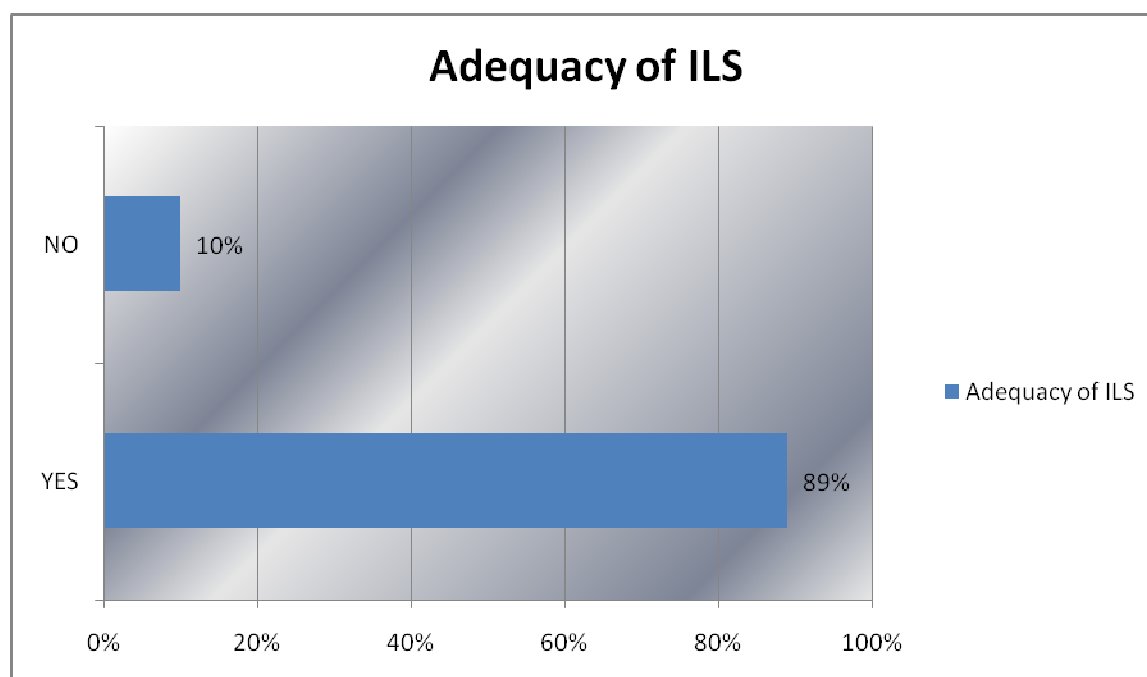
All the 65 undergraduate students responded that they had undergone Information Literacy Skills (ILS) training however, different sentiments were revealed on whether the information literacy skills training was adequate in equipping them with skills to fully utilize electronic information resources offered by the Jokomo /Yamada Library. Fifty-eight respondents representing 89% responded that the information literacy skills training were adequate in equipping them to fully utilize electronic information resources. However, various suggestions were recommended by the respondents, almost 80% suggested that they need practical and interactive lessons on the use of electronic information resources. They claimed that the

information literacy skills training were more theoretical. Some of them were of the notion that information literacy skills training must also be conducted more frequently than just once in the first year. Nine percent (9%) of the respondents mentioned that the information literacy skills training were inadequate but they shared the same view that they needed more practical lessons. The remaining 2% did not state whether the information literacy skills training was adequate and did not give any suggestion on what must be done.

5. DISCUSSION

Results showed that the electronic information resources are generally inadequately utilized by undergraduate students at Africa University. Findings of this study show that students could exploit the benefits of electronic resources in their academic work but there are a number of issues which must be addressed urgently to improve usage of electronic information resources subscribed to by the University Library. This is because the majority of the undergraduate students in the Faculty of Management and Administration confirmed that they were facing challenges in accessing and using electronic information resources because of slow or unreliable Internet connection thereby leading to low usage of e-resources offered by Jokomo / Yamada Library.

Further, the usage of electronic resources was low because the majority of the students revealed that electronic information resources offered by the Library were moderately relevant. This implies that the majority of students did not fully utilize the resources because they were not highly relevant. All the respondents confirmed that they have undergone information literacy skills training course and the majority responded that the information literacy skills training course was adequate however the majority also suggested they preferred more practical and interactive lessons than theory. This implies that the students were equipped theoretically but practically they cannot effectively use the e-resources. The majority of the students responded that they use electronic information resources for course assignments. Generally, the

undergraduate students have shown that they have an interest of using electronic information resources for their academic needs but their expectations were not fully met because of the above mentioned circumstances. Further, the information literacy skills course needs to be hands-on oriented in order to adequately equip students with information literacy skills required to fully utilize electronic information and leverage self determined learning.

All the participants responded that they had undergone information literacy skills training course and the majority indicated that the information literacy skills training course equipped them with skills to fully utilize the electronic information resources offered by Jokomo / Yamada Library however a large number of the students strongly suggested integration of more practical and interactive lessons so that the students may be able to perform practical searches on their own.

In addition, the information literacy skills course should strongly emphasize the use of the e-resources to meet students' needs to fulfill their academic pursuits. The usage percentages of the sampled major databases showed that only two databases were slightly above half and the rest were below half. This was a sign that there is a low usage of e- databases. In order to improve the usage, students and lecturers must be made more aware of the databases.

6. CONCLUSION

From the findings it can be concluded that students lacked adequate hands-on skills required to retrieve information from subscribed electronic information resources hence low usage.

7. RECOMMENDATIONS

From the findings of the study the following recommendations can be given to enable the Jokomo / Yamada make its electronic resources effectively utilized by students.

1. First the University and Library in particular should increase or ensure that there are sufficient networked computers with fast Internet connectivity and increase the bandwidth. There is need for computer training to enhance students ICT skills. This will improve on full text delivery of resources, electronic document delivery and the use of

search engines. This calls for increased procurement of such facilities.

2. Regular review of electronic databases should be done to ascertain their relevance to the academic programmes in the university. The University should subscribe to the databases that are more relevant to its curriculum than to be guided by a consortium. In addition, undergraduate students should be taught how to construct relevant search terms to whatever information they would want to search for because in most databases wrongly framed search terms yield undesirable results. Students may think databases are irrelevant yet this would be caused by their failure to construct relevant search terms.

3. Academics should be involved in the selection process of electronic information resources so that they would confirm the relevancy of the databases and may appreciate the databases and therefore would recommend students to use the databases. In this view, faculties should collaborate with librarians in designing and developing coursework assignments requiring the use of electronic resources.

4. The Information Literacy Skills training course should include more practical and interactive lessons to equip students with hands-on skills vital in effective information retrieval. Information Literacy Skills Course should strongly emphasize the use of the e-resources to meet the needs of students in their academic pursuits. Faculty Librarians should engage Faculties in using e-resources. Academic staff should also play a role by recommending the use of e-databases to students rather than just recommending students only to print resources. Reading lists should also include e-resources and multimedia information resources.

5. Academic libraries should employ more effective promotional and marketing strategies for e-resources such as: using e-mail alert messages, text messages and use of departmental notice boards through selective dissemination of information as a method of promoting use of the library's electronic resources to attract the use of e-resources.

Faculty Librarians need to actively train and update faculties on the available electronic information resources. In addition, librarians and academics should collaboratively sensitize students on the usefulness of electronic resources in their studies. This will compel students to utilize electronic resources.

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