



Addis Ababa University
College of Natural and Computational Sciences
School of Information Science

**The Effect of Information Literacy Skills on The Utilization of E-Resources:
The Case of Ethiopian Civil Service University Graduate Students**

Belachew Dagne

Addis Ababa, Ethiopia

September, 2020

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The Case of Ethiopian Civil Service University Graduate Students**

**A Thesis Submitted to The School of Graduate Studies of Addis Ababa
University in Partial Fulfillment of The Requirement for The Degree of
Master of Sciences in Department of Information Science**

By: BELACHEW DAGNE

Advisor: Dr. DANIEL GELAW ALEMNEH

September, 2020

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By Belachew Dagne

Signature of the Board of examiners for Approval

Name	Title	Signature	Date
_____	Chairperson	_____	_____
<u>Dr Daniel Alemneh</u>	Advisor	_____	_____
<u>Dr Gashaw Kebede</u>	Examiner	_____	_____
<u>Dr Rahel Bekele</u>	Examiner	_____	_____

Declaration

I, **Belachew Dagne**, declare that this thesis is my original work. This thesis has not been presented as a partial requirement for a degree in any other university or college. And also, all sources of materials I used in this thesis have been appropriately acknowledged.

Belachew Dagne
September, 2020

The Thesis has been submitted for examination with my approval as university advisor

Dr. Daniel Gelaw Alemneh
September, 2020

Dedication

This thesis is dedicated for my mother, Tiruwerk Mengistie.

Table of Content

Table of Content	i
List of Tables	v
List of Figures	vi
List of Acronyms.....	vii
Acknowledgement	viii
Abstract.....	ix
Chapter One.....	1
Introduction	1
1.1. Background of The Study	1
1.1.1. Ethiopian Civil Service University Profile	3
1.2. Statement of the Problem	4
1.3. Research Questions	6
1.4. Research Objective	6
1.4.1. Specific Objective	6
1.5. Hypotheses	6
1.6. Significance of the Study.....	7
1.7. Scope and Limitations of the Study	7
1.8. Operational Definition of Terms	8
1.9. Organization of the Study	9
1.10. Summary of the Chapter.....	9
Chapter Two.....	10
Literature Review	10
2.1. Introduction	10
2.2. General Concept of Information Literacy	10
2.3. Components of Information Literacy.....	13
2.4. Information Literacy Model	15
2.4.1. Seven Pillars of Information Literacy (SCONUL, 1999)	15
2.4.2. Research Process Model (Stripling and Pitts, 1988)	16

2.4.3. The Big6 Information Literacy Model (Eisenberg and Berkowitz, 1990)	16
2.4.4. Information Search Process (Kuhlthau 1993)	17
2.4.5. Pathways to Knowledge (Pappas and Tepe 2002)	18
2.4.6. The Seven Pillars of Information Literacy (SCONUL, 1999).....	20
2.5. Need of Information Literacy Skill	26
2.6. Information Literacy Practice in Some Developed Countries	28
2.7. Information Literacy Practice in Some African Countries	29
2.7.1. Kenya.....	30
2.7.2. Nigeria	30
2.7.3. Tanzania	30
2.8. Electronic Information Resources.....	30
2.8.1. Types of Electronic Resources.....	32
2.8. Information Literacy Skills in Using Electronic Information Resources	33
2.9. Postgraduate Students' Use of Electronic Information Resources.....	34
2.10. Strategies to Enhance Students Information Literacy Skills	35
2.10.1. Online Information Literacy tutorials.....	35
2.10.2. Integration of information literacy into curriculum.....	36
2.11. Theoretical Framework	38
2.12. Conceptual Model.....	40
2.12. Related Work	41
2.12. Summary of Literature Review	47
Chapter Three	48
Research Design and Methodology	48
3.1. Introduction	48
3.2. Research Design	48
3.3. Population of the Study	49
3.4. Sampling Technique	50
3.4.1. Sample Size Determination.....	50
3.6. Data Collection Instruments	51
3.6.1. Questionnaire	51
3.7. Validity and Reliability of the Instrument	53
3.7.1 Validity	53

3.7.2 Reliability.....	53
3.8. Data Collection Procedures.....	54
3.9. Data Analysis.....	54
3.10. Ethical Considerations.....	55
Chapter Four	56
Data Analysis and Presentation	56
4.1. Introduction	56
4.2. Demographic Profile of Respondents and Result of Analysis	56
4.2.1. Gender of Respondents	56
4.2.2. Age of Respondents	57
4.2.3. College of Respondents	58
4.3. Analysis of Research Questions and Results	58
4.3.1. Research Question 1: What Information literacy skills do Ethiopian Civil Service University graduate students possess and at what level of mastery?	59
4.3.2. Research Question 2: What type of ILS problems are, Ethiopian Civil Service University graduate students are encounter when attempting to utilize e-resources?.....	63
4.3.2.1. Frequency usage of electronic Information Resources	69
4.3.3. Research Question 3: Which components of Information literacy have Ethiopian Civil Service University graduate students needed to utilize e-resources?	71
4.3.4. Research Question 4: What methods are used by Ethiopian Civil Service University graduate students to acquire information literacy skills?.....	73
4.4. Hypothesis Testing.....	74
Chapter Five	78
Summary of the Findings, Conclusion and Recommendation	78
5.1. Introduction	78
5.2. Summary of the Findings	78
5.2.1. Level of Information Literacy Skills of Ethiopian Civil Service University Graduate Students ..	78
5.2.2. Problems that are encountered to Utilize E-resources in Ethiopian Civil Service University Graduate Students	79
5.2.3. Components of Information Literacy Skills ECSU Graduate Students Have Needed to Utilize E-resources.....	80
5.2.4. The Methods used Ethiopian Civil Service University graduate the students to acquire information literacy skills.....	81

5.2.5. Level of Information Literacy Skills Possessed by CUDE and CFMAD Graduate Students in ECSU	81
5.2.6. Correlation Relationship Between Information Literacy Skill Ability and Utilization of E-Resources in Ethiopian Civil Service University Graduate Students	81
5.3. Conclusion	82
5.4. Recommendation.....	82
5.5. Direction for Further Research	83
5.6. Researcher Contribution	84
Reference	85

List of Tables

<i>Table 2.1 Summary of Information Literacy Model.....</i>	<i>19</i>
<i>Table 2. 2 Summary of Related Works.....</i>	<i>44</i>
<i>Table 3. 1 Population Distribution.....</i>	<i>49</i>
<i>Table 3. 2 Selected Population for the Study.....</i>	<i>50</i>
<i>Table 3. 3 Sources of Questionnaires</i>	<i>52</i>
<i>Table 3. 4 Case processing Summary.....</i>	<i>53</i>
<i>Table 4. 1 Questionnaire Distributed Returned and Unreturned</i>	<i>56</i>
<i>Table 4. 2 Gender of Respondents' Distribution</i>	<i>56</i>
<i>Table 4. 3 Age of Respondents' Distribution</i>	<i>57</i>
<i>Table 4. 4 Respondents' Colleges Distribution</i>	<i>58</i>
<i>Table 4. 5 CUDE Students' Level of Information Literacy Skill.....</i>	<i>62</i>
<i>Table 4. 6 CFMAD Students' Level of Information Literacy Skill.....</i>	<i>62</i>
<i>Table 4. 7 Information Search Ability Possessed by Students</i>	<i>64</i>
<i>Table 4. 8 Information Locate and Access Ability Skill Possessed by Students.....</i>	<i>66</i>
<i>Table 4. 9 Information Evaluation Ability Skill Possessed by Students.....</i>	<i>67</i>
<i>Table 4. 10 Information Use Ability Skill Possessed by Students</i>	<i>68</i>
<i>Table 4. 11 Frequency of Electronic Information Resources Usage</i>	<i>69</i>
<i>Table 4. 12 Tool Literacy Knowledge.....</i>	<i>71</i>
<i>Table 4. 13 Computer Literacy Knowledge</i>	<i>71</i>
<i>Table 4. 14 Accessed to Computer.....</i>	<i>72</i>
<i>Table 4. 15 Using Internet.....</i>	<i>72</i>
<i>Table 4. 16 Network Literacy Knowledge.....</i>	<i>72</i>
<i>Table 4. 17 Digital Literacy Knowledge.....</i>	<i>73</i>
<i>Table 4. 18 Information Literacy Skill Training Provided by ECSU.....</i>	<i>74</i>
<i>Table 4. 19 Information Literacy Skill Acquisition Methods</i>	<i>74</i>
<i>Table 4. 20 Independent T-test the Level of Information Literacy skill Between CUDE and CFMAD College Students.....</i>	<i>75</i>
<i>Table 4. 21 Correlational Coefficient of ECSU Graduate Students Information Literacy Skill Ability and Utilization of Electronic Information Resources</i>	<i>76</i>
<i>Table 4. 22 Summary of Multiple Regression Information Literacy Skills Influences on the Utilization of Electronic Information Sources</i>	<i>76</i>
<i>Table 4. 23 ANOVA for the Regression of Utilization of Electronic Information Sources.....</i>	<i>76</i>

List of Figures

<i>Figure 2. 1 The Big6 as a Feedback Process (Eisenberg 2008).....</i>	<i>17</i>
<i>Figure 2. 2 SCONUL Seven Pillars Model for Information Literacy.....</i>	<i>21</i>
<i>Figure 2. 3 SCONUL Seven Pillars Model for Information Literacy.....</i>	<i>39</i>
<i>Figure 2. 4 Conceptual Model the Relationship Between Information Literacy Skill with E-resources Use</i>	<i>40</i>

List of Acronyms

ACRL-----	Association of College and Research Libraries
ALA-----	American Library Association
ALIA-----	Australian Library and Information Association
ANOVA-----	Analysis of variance
ANZIL-----	Australian and New Zealand Information Literacy Institute
ASLA-----	Australian School Library Association
CD-ROMs-----	Compact Disc- Read only Memory
CFMAD-----	College of Finance, Management and Development
CUDE-----	College of Urban Development and Engineering
ECSU-----	Ethiopian Civil Service University
EIRs-----	Electronic Information Resources
ETD-----	Electronic Theses and Dissertations
IFAP-----	Information for All Program
ICT-----	Information and Communication Technology
IL-----	Information Literacy
ILS-----	Information Literacy Skill
ISP-----	Information Search Process Model
OPAC-----	Online Public Accesses Catalogue
SCONUL-----	Society of College, National and University Libraries
SPSS-----	Statistical Package for Social Sciences
UNESCO-----	United Nations Educational, Scientific and Cultural Organization

Acknowledgement

First and for most, I express my sincere to the ALMIGHTY GOD who bestowed me with moral, knowledge and strength to carried out this research work. Second, my profound appreciation goes to my advisor Dr. Daniel Gelaw Alemneh for his motivation, contribution, supportive role and constructive comments towards this research work. And also, I acknowledge for ECSU Library and Documentation directorate director, Ms Amelewerk Melkie her support facilities for data collection process.

This research work would not have been completed without the help of my colleagues and family, especially my sister, Meseret Dagne and my spouse, Yeshe Abebe. I would like to express my appreciation to them for their support, prayer and encouragement allowed me to finish this work.

Lastly, I would like to express my deepest gratitude for ECSU registral office employers for their willingness to provide students' profile. And also, I would like to thank to all ECSU graduate students who participated in this study. Their inputs were very important for the completion of this study.

Abstract

The study investigates the effect of information literacy skills to utilize e-resources in ECSU graduate students. The advancement of Information and Communication Technology (ICT) and the development of an electronic database system the entire scenario of information processing, disseminating and communicating ways shifted from print to non-print format. These have provided a good opportunity for the users to access the required information timely without restricting a geographical area. However, many users are faced with different challenges to find, accesses and locate, evaluate and use the needed information from the sources due to the overabundance of electronic information, which is available on the Internet in different forms and formats. Therefore, the need for Information literacy skills has a significant role to improve as such problems. To addresses the problems the study was guided by four research questions and two hypotheses. Several studies have examined the effect of Information literacy to utilize information in a full range. To investigate the effect of Information literacy skill to utilize e-resources, this study addressed different models, which are designed by scientists, scholars, theorists, organizations, associations and individual to improve information literacy awareness, different components of information literacy skills, need of information literacy, the practice of information literacy in the context of different countries, electronic information sources and indicate strategies to enhance information literacy skills.

To conduct the study a descriptive survey was applied. The target population of the study was Ethiopian Civil Service University graduate students both College of Urban Development and Engineering, and College of Finance, Management and development, who are admitted for the 2019/2020 academic year. Stratified sampling technique was used to select 203 students from the entire population and to reach each respondent, random sampling technique was applied. To collect the data from the respondents two hundred three (203) copies of questionnaire were administrated and for analysis one hundred sixty-five (165) questionnaire was used. The data for the study analyzed with SPSS tool and analyzed using descriptive analysis, independent t-test and correlation coefficient. After then, the four research questions were answered and two hypotheses were tested at 0.05 levels of significance.

The finding of the study revealed that, the level of Information literacy skills for CUDE college students was mean score $X=2.44$ and for CFMAD college students was $X =2.40$, this indicates that they have low level Information literacy skills. And also, their level of skills between the two colleges was determined using independent t-test and the results were indicated that there is no a significant difference were existed among to them. To utilize e-resources ECSU graduate students were encountered different problems, according to the investigation, they possess poor searching, locating and accessing, evaluating and using skills. As well as they didn't aware for different type of information literacy skills such as tool

literacy, network literacy and digital literacy. To acquire information literacy skills, they used the university library training (N=17;47.2%), guidance from library staff (N=10,27.7%), faculty (N=7; 19.4%) and formal education (N=2, 5.5%) respectively. This indicates the university library has a responsibility to deliver the training for the students. The other results found in this study, students' information literacy skills and their use of electronic information sources have a positive and strong significant relationship ($r=0.945$; $df = 163$; ($P<0.05$)).

In this digital age, without Information literacy skill accessing a relevant electronic information from the sources is impossible because of that within a couple seconds a huge amount of information are loaded on the Internet. Due to the quantity and the diversity of the information is a challenge for the users its' quality, authenticity, validity, and reliability. Therefore, to maximize the utilization electronic resources the need of information literacy competencies is mandatory in every level of education.

Chapter One

Introduction

1.1. Background of The Study

Information is vital resource needed by human being for every walk of life in each and every activity. Information can be defined as processed data which helps us for decision making, increase our knowledge, improve our mental thinking and overall change in the societal status of the nation. (Vellaichamy 2017) indicated that the development of the Information and Communication Technology (ICT) devices, the rapid rise of electronic databases, and modern e-book technologies have altogether changed the entire scenario of informatics. The users' attitude to information gradually shifted from the printed document to electronic resources. E-resources are materials which are found in digital format and accessible electronically; such as electronic journals, electronic books, theses, dissertations, reports, project works, online databases in variety digital formats. Thanks to the scalability of technology, electronic resources are exponentially increasing on the Internet and widely used in various educational institutions particularly in higher education institutions. In order to utilize the growing range of electronic resources, Students must acquire a special competences and practice necessary to exploit e-resources. The skills which are required by individuals, in this case students are to maximize their potential to the usage and accessibility of electronic resources. Due to the fast growth of information and communication technology, particularly the internet, the traditional method of research, retrieve, storage and communication of electronic resources changed dramatically. However, electronic resources have many challenges ranging from identification, selection, and organization, to evaluate and use. In the era of information explosion, it would be very difficult to locate and use effectively the needed information without information proficiency skill. In order to navigate the increasingly complex information environment, the importance of paying more attention to "Information literacy competency" considered as a critical success factor for Students.

The term Information Literacy has been first used by the president of the US Information Literacy Association Prof. Paul Zurkowsky in 1974 (Bawden 2001). The main aim of the concept of information literacy, which can be originated by Zurkowsky is to achieve universal information literacy in the United States. He described that information literacy is a process of retrieving and applying information to solve problems and make decisions, particularly in the workplace. While the widespread use of information literacy, followed after the publication of the ALA final report of the presidential committee on information literacy in 1989. Information Literacy as described by another two England scholar Chris Armstrong and Stephen Town quoted that "Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner"

(Armstrong et al. 2005). The information literate individual has full understanding about recognizes the need for information, evaluate the needed information, and use information in an ethical manner.

- **The Information literate person recognizes when and why information is needed:** When, individuals know when need accurate and appropriate information it can helps to them for making intelligent decisions and to achieve different task completion such as term paper, research project or report work. Determines the nature and scope of the information needed to develop a thesis statement and formulate questions based on the information needed, identify general information sources to increase familiarity with the topic, define or modify the information needed to achieve a manageable focus, identify key points and create new terms that describe the needed information and recognize that existing information can be combined with original ideas, experimentation, and analysis to produce new information (Sebuava 2016).
- **The Information literate person can locate and access the needed information:** An information literate person, identify appropriate key words and synonyms to construct search strategies to locate information and know how to broaden and narrow search results using Boolean operators. It allows us to access information from various sources with the aid of different information access tool which includes library catalogue, indexing services, citation services and databases.
- **The information literate person understands how to evaluate the needed information:** An information literate person critically evaluates both the information and its sources; reliability, validity, accuracy, authority, timeliness, and point of view. And also, analyzes the structure and logic of support arguments, understand the cultural, physical, or other context within which the information was created and recognizes the impact of context on and interpreting the information (Sebuava 2016).
- **Information literate people know how to use information in an ethical manner:** An information literate person knows the rules and laws how to access and use information, know how and when to acknowledge the information sources, selects and uses an appropriate documentation style for citing sources; demonstrates awareness of plagiarism and of copyright, intellectual property and fair use laws (Underwood 2009).

In the advancement of information technology now information is available in the form of electronic resources in the cloud. Due to this, it is making a good opportunity for the users, particularly for students in terms of its usability, readability, affordability and accessibility. (Adeniran and Onuoha 2018) noted that e-resources have become an invaluable as a research tools and these resources serve as real sources of information which is students can use to help with their class assignments, write research and term papers,

and search for information on their subject areas. However, successfully to use the available e-resources students need to acquire information literacy skills to explore it. Therefore, for effective information search, to identify sources of information, to acquire the needed information, to evaluate the nature of information, to access the needed information effectively and efficiently information literacy skills have a vital role.

We live in an increasingly complex world that contains an abundance of information and also; this information available in a variety of formats and forms at different sources while as it may not necessarily behave the same quality and its importance. In the era of information explosion to obtain accurate and effective information is not an easy task because of that information are abundantly available or overabundance of data are existing. However, in order to survive in this information and knowledge society, individuals should become an information literate person to utilize those sophisticated information resources. According to (Underwood 2009) an information literate person is you will be able to think critically and use a wide variety of information sources and resources in your studies. The ability to manipulate and use information will give you the confidence that is critical to academic success and personal self-directed learning. In addition, you will be able to apply and transfer these skills to many other areas of learning and research. You will become aware of the empowering role that information plays in your social life and in your work life.

The need of Information literacy in higher education has a great significance due to, the appearing of electronic resources such as books, periodicals, journal articles, magazine articles, reports, thesis and dissertations etc. And also increasing use of the internet as an information source. (Frigo, O’Kelly, and Tyron 2010) defined that information literacy is a set of competencies to find information effectively; manage an abundance available of information; think critically about resources; synthesis and incorporate information into one’s knowledge base; creatively express and effectively communicate new knowledge; use information ethically; and using knowledge to better society. The major role of Information literacy in higher education is preparing students to become an information literate person and independently do what they want. But in developing country the concept and practice of information literacy didn’t properly implement (Okiki and Mabawonku 2013) and (Lawal et al. 2010). In Africa, a number of students at different levels of education are unaware with the diversity of information sources and services within and outside the library. While, many developed countries educational institutions are fully integrated information literacy within their educational system (Emmanuel E. Baro 2011).

1.1.1. Ethiopian Civil Service University Profile

In Ethiopia, Ethiopian Civil Service University one of the higher education institution and it established in 1995. As an autonomous body officially, the university was started in February 1996 by Council of

Ministry Regulation No. 3/1996. From the beginning up to now the goal of the university is building Ethiopian Civil servant through, education and training (“www.ecsu.edu.et,” n.d.).

The establishment of the university is the need for the country’s civil service system, due to the evolvement of a new form of government structure, namely, the introduction of Federal Government System in 1991. The main objective of the university introduced as a higher educational institution, to produce to trained manpower particularly for regional governments. To fulfill this urgent need, the university began only two fields of studies: law and economics (“www.ecsu.edu.et,” n.d.).

Extremely, the university has been contributed civil servant capacity building by delivering different short-term courses and undergraduate and postgraduate education programs; rendering research and consultancy services; offering library documentation services and facilitating conferences, seminars and workshops. The University employs delivery modalities ranging from resident training and educational programs to the on-the-job, evening and distance education, including Global Development Learning Network (“www.ecsu.edu.et,” n.d.).

1.2. Statement of the Problem

Information Literacy is an essential tool, in the new and rapidly evolving technologies and the advancement of electronic information resources. It enables students to benefit from the huge amount of information which are available electronically in whatever places at any time. The uses of electronic information resources continuously rise particularly within higher educational institutions of learning, so that the students should be expected to develop the required information literacy skills. In the Information Society, information literacy skills have a prominent role specially for graduate students to know how to search information they need, where to find, how to evaluate it, how to produce and present the new information in a proper way and how to use it in an ethical manner. However, many students may not be able to express their information need in a proper manner, possibly due to lack of the different aspect of information literacy skill components like computer literacy, tool literacy, library literacy, digital literacy and network literacy. The need of computer literacy is very important to search, locate, retrieve and use relevant information from the electronic environment particularly for graduate students for their scholarly works. (Abubakar and Adetimirinz 2015) argue that without adequate computer literacy skill postgraduate students may not access and use e-resources. Therefore, basic computer literacy skill can enable individuals to access the needed e-information resources. The requirement of digital literacy is necessary for the information users. It creates a platform where individuals can access information on the Internet at the instance, they need it and these have consequently changed the information seeking behavior of users

(Itsekor and Iwu-James 2012). This implies that their low literacy skill can affect their works, creation, invention and production.

In this digital age, electronic information is found in the networked environment in different forms and format. To exploit those resources potentially from the sources the users in this case students should possess information searching skills. However, many students have a problem of searching skills; they follow inappropriate way of search, didn't construct or formulate an appropriate search term and run ineffective way of information search strategy. Therefore, in this condition the students waste much more time to get the desired information from the desire sources; from the web, online database, online public accesses catalogue; e-article, e-journal, e-book site to full fill or to accomplish their objectives, or goals (Baro and Keboh 2012) and similarly (Azubuike 2016) argue that poor searching skill is a factor to access e-resources. Furthermore, they couldn't benefit from the vast quantities of information which are available electronically due to lack of information search skills. On the other hand, information resources being exploded daily within a second and there is a challenge to use these resources effectively and efficiently. The students cannot evaluate the information itself and its sources critically, as well as they are applying unfair uses of the work of others which is simply, they are copy and paste without giving an appropriate credit for the owner of the work.

In this Information explosion era, information literacy skills allow graduate students to identify and access information resources for their research work, assignment, project, report. It provides the ability to locate information necessarily for quality research, especially at the graduate level where quality research is expected to contribute to the body of knowledge. The graduate students are needed to use a great number of information literacy skills when they are processing information. To prepare for seminar presentation as well as dissertation and thesis, graduate students need to know how to locate, evaluate and use information from many sources including a variety of online resources. They need to be aware issues which are related to the ethical use of information, such as copyright and plagiarism (I. Odede 2018). The evidences which indicate that sophisticate information literacy skills are possible for the attainment of academic success. While graduate students who lack information literacy skill become confused on where to get the required information for a particular assignment or research and also this confusion, many of them leads to lose confidence in their academic work (Ademilua 2019). Several studies examine that lack of information literacy is partly the case of underutilization of existing information resources and information and communication Technology (ICT).

In today's information rich environment, information literacy skill is very essential due to, the rapid growth of information resources which delivered from various media and the advancement of Information

and Communication Technology (ICT). It empowers people in all walk of life to access, evaluate and use information effectively and efficiently to achieve personal, social, occupational and educational goals. However, a large number of postgraduate students in developing nations have poor e-information literacy competency. Their low literacy skills are correlate with their inability to exploit the benefits of electronic resources in their academic work (Adeleke and Emeahara 2016).

1.3. Research Questions

- What Information literacy skills do Ethiopian Civil Service University graduate students possess and at what level of they mastery?
- What type of Information Literacy skill problems are, Ethiopian Civil Service University graduate students are encounter when attempting to utilize e-resources?
- Which components of Information literacy have Ethiopian Civil Service University graduate students needed to utilize e-resources?
- What methods are used by Ethiopian Civil Service University graduate students to acquire information literacy skills?

1.4. Research Objective

The main objective of the study is to investigate the effect of Information literacy skills on the utilization of e-resources by graduate students in the Ethiopian Civil Service University.

1.4.1. Specific Objective

To achieve or accomplish the general objective of the study, the research has the following specific objective: -

- Investigate what information literacy skill, Ethiopian Civil Service University graduate students possess and at what level of they mastery to utilize e-resources
- Identify what type of Information literacy skill problems are encounter by Ethiopian Civil Service University graduate students to utilize e-resources
- Identify which components of information literacy, Ethiopian Civil Service University graduate students have needed to utilize e-resources
- Investigate what methods, Ethiopian Civil Service University graduate students are used to acquire information literacy skills

1.5. Hypotheses

To determine the level of Information literacy skills among CUDE (natural science) and CFMAD (social Science), and to demonstrate the relationship between information literacy skills and the utilization of e-resources, the following two null hypotheses were designed and tested at 0.05 level of significance.

H01 There is no significant difference on the level of information literacy skills possessed by the College of Urban Development and Engineering (CUDE) and College of Finance, Management and Development (CFMAD) graduate students in the Ethiopian Civil Service University.

H02 There is no significant relationship between information literacy skill, ability and utilization of e-resources in Ethiopian Civil Service University graduate students.

1.6. Significance of the Study

The main aim of the study was focused on assessing the effect of information literacy skill to access e-resources by the graduate students in the Ethiopian Civil Service University. The study was trying to investigate the level of students' information literacy skill between the College of Urban Development and Engineering (CUDE) and College of Finance, Management and Development (CFMAD) graduate students to utilize e-resources confidentially for their attainment academic works. As well as indicate what type of problem they possessed effectively and efficiently to search, accesses and locate, evaluate and use e-resources by the students. Determine the present status of their information literacy skills and indicate their information literacy acquisition methods to full fill their gaps.

The study provided information about information literacy skill and create a perception for its' effect to utilize e-resources in Ethiopian Civil Service University graduate students. As much as possible, it may be assisting the library administrators to consider design and develop information literacy instruction and to deliver a constant information literacy skills program as stakeholder to improve students' information literacy skill. As well as it may be used as a resource for students, teachers, librarian and other staff employer or users. In addition to this, the study may be motivating or initiating other researchers to conduct further research, because there are no any other similar studies were conducted in Ethiopian Civil Service University higher education.

1.7. Scope and Limitations of the Study

The study focuses on the effect of Information Literacy skills to utilize electronic information from its sources in Ethiopian Civil Service University graduate students. The study covers information literacy skills ability such as identification of information needs, search skill, locate and access, evaluation and information use skill. In addition to this, the relationship between information literacy skills and use of e-resources. The study is limited to only in Ethiopian Civil Service University higher educational institution, not include other educational institutions. The Institution has three colleges those are College of Urban Development and Engineering, College of Finance, Management and development, and College of Leadership and Good Governance. While the study confined only two Colleges which are CUDE (College of Urban Development and Engineering) and CFMAD (College of Finance, Management and

Development). It excluded the other college which is called CLAD (College of Leadership and Governance) because the students from this college may have either natural or social science background. Unlike CUDE and CFMAD departments, some CLAD departments haven't required any background rather than students who have a degree graduate in any field of study, for example leadership and Good Governance department. In this case the researcher wants to researched the level of information literacy skill between the natural science and social science is difficult because CLAD may be held up both background studies. Time and cost are also another major constraint for the researcher to cover all college students. In addition to this another limitation is the study did not cover all aspects of information literacy skills and e-resources.

1.8. Operational Definition of Terms

In the context of this study, the following terms are defined as used.

Information Literacy skills: a set of abilities or skill, which enable individuals to understand when information is required and have the capacity to seek, locate, evaluate and use effectively the needed information (ALA 1989).

Electronic resources: Information stored electronically and accessible through different electronic device and system, and networked environment in different publishing models such as OPACs, online database, CD-ROMs, e-journal, e-book, internet sources, e-mail publishing, wireless publishing, electronic link and web publishing (Haridasan and Khan 2009).

Information Literate person: person as one who “recognizes when information is needed and be able to locate, evaluate, and use effectively the needed information” (ALA 1989).

Information explosion: the rapidly or exponentially increasing the amount of both published, unpublished information and the effects of this abundance of data for patronage (Kadiri and Adetoro 2012).

Digital Divide: The inequality in accessibility and utilization of ICT infrastructure or facility both hardware and software technologies between different regions/countries in the world (Ani 2013).

Data smog: The emergency of huge amount data and it can cause an obstacle in our going live, it may be socially, politically or economically (Shenk 1997).

Utilization: The maximum use of existing electronic resources for productivity, creativity, or innovation. Having searched and retrieval skills to exploit the content of electronic information.

1.9. Organization of the Study

The study is organized and divided into five chapters. In the first Chapter One, the introduction to the study is presented and it specifies the research problem of the study, objectives, hypothesis, significance, scope and limitation of the study and operational definition of terms. Finally, organization of the study was presented. Chapter Two discussed for the literature review of related works with information literacy and includes the theoretical framework and conceptual model. It was done using different books, e-journal, project, report and internet resources. The research methodology for the study is presented in Chapter Three. This Chapter presented the methodology of the study which comprises research design, population of the study, sampling technique, data collection instrument, validity and reliability of the instrument, data collection procedures, and ethical consideration. Chapter Four, this is the most important part of every research study. Under this chapter, to answer the proposed research questions data was analyzed and presented in tables and charts, and the statistical techniques were used to interpret the statistical data. Chapter Five, presents, summary of the finding, conclusion, recommendation, further research and researcher contribution to the study.

1.10. Summary of the Chapter

This chapter provides background of understanding for Information literacy and its relationship with e-resources. The scalability of technology and the development of e-database, electronic resources are found on the Internet. These are provided a good opportunity for the end users particularly for the students in terms of its' searchability and accessibility. However, many students are faced with several challenges to search, locate, evaluate and use the needed information from the entire sources, due to the users possessed a poor information literacy skill. Therefore, in this 21st century the Information literacy skills are a fundamental need to survive in this digital world.

Chapter Two

Literature Review

2.1. Introduction

In the information age, e-resources are available on the Internet in a variety of formats. One of the key characteristics of the early 21st century is the challenge of information disruption to the society around the world, because the rapid growth and penetration of information from the Internet through various technologies. With the advancement of information technology, anyone can post anything on the Internet, especially in the World Wide Web environment without independent review and evaluation, resulting in an incredible or non-trusted information are found on the Internet and also, information explosion is happening. The explosion of information on the Internet has been a great challenge for many beginners and experts in accessing a relevant resources for researchers, teachers and students (Odede and Nsibirwa 2018). For this reason, to access and find trusted sources of information, we need information literacy skills to use the information responsibly, critically, and objectively. It allows us to provide the skills we need to learn information effectively and efficiently. It enables us to analyze and evaluate the information we seek, thus giving us a confidence for using that information to make a decision or create a product (Chakrvarty 2008). For students' information literacy skills equip to them with the abilities to source for the most up-to-date and authoritative information that would assist them in doing their work more effectively.

According to (Andretta 2005) and other scholars indicate that information literacy has been evolved from library education practices, concepts such as library instructions, bibliographic education, user education, and information literacy programmers. These terms referred to the teaching of library instruction that covered information tools such as library catalogues and other library reference sources that helped the user when searching for information. On the other hand, different literatures indicated that information literacy has emerged as a result of the rapid growth of digital technology.

2.2. General Concept of Information Literacy

Information literacy is a two words "information" and "literacy". Information is organized data and literacy means the ability to read, write and understand it. Literacy is a basic tool for engaging in information literacy activities. So, the traditional definitions of information literacy mean reading, writing and interpreting information. But, in computer and network environments, information literacy is the ability to access, process, and use information. Information literacy is about identifying the need for information and accessing, using, comparing and evaluating the information so that it can make quick and the right decisions and thereby progressing towards knowledge society (Vellaichamy 2017).

With the advent of information technology in the early 1970s, the idea of information literacy was evolved and several researchers have been put forward different definitions in various contexts. As well as a number of revisions have been made over the past few decades due to its role in the field of Library and information management (Lenart and Lewis 2019). In 2015 the ACRL revised that “Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning”.

(Schallier 2007) cited in his conference paper the definition of information Literacy gave in 1989 by the American Library Association. The term “Information literacy is an understanding and set of abilities enabling individuals to recognize when information is needed and have the capacity to locate, evaluate and use effectively the needed information”. Since then, information literacy has been constantly under debate and a number of scholars proposed many definition, description, principles, models and standards. According to (Armstrong et al. 2005) define that “Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner”.

Information literacy is the ability to identify, evaluate, organize and use the information judiciously (Syamalamba 2011). The American Library Association described that Information Literacy is a set of abilities requiring individuals to “recognize when information is in need and have the ability to locate, evaluate and use effectively the needed information”. Recognizing the need for information is the ability to understand what information a person needs to perform or solve a task. The aspect of locating and evaluating information; A person's ability to know where to seek the necessary information based the context and the ability to asses' accuracy, credibility and reliability of the obtained piece of information respectively, and then use information effectively and optimally to solve problems at hand (Tilvawala and Myers 2009). Whereas, according to (Lin 2010) information literacy have two commonalities: A set of abilities, skills, competencies, or fluencies, which enable people to access and utilize information resources and the creation of effective information solutions to solve problems. The ALA also states that “Information Literacy is a survival skill in the information age”. Information literacy forms the basis and weapon for lifelong learning and it is common to all subjects, all learning environments and all levels of education stage. It allows learners to master content and extend their investigations, to become more self-directed, and assume greater control over their own learning. (Vellaichamy 2017) state that IL is the only way to enable people to make efficient, effective, creative, legal, ethical and strategic use of information for achieving their goals.

(Hepworth and Walton 2009) define that information literacy is a complex set of abilities which enable individuals or learners to engage critically with and make sense of the world, its knowledge and participate effectively in learning to make use of the information landscape as well as contributing to it. Information literacy skills for independent learners confer a capacity being able to learn independently and effectively use the knowledge, data and information. While, without a well-developed capacity to assess and use information from books, library databases, or the Internet it is very hard and students may make suspicious decisions. In a digital world, people require new skills to seek, evaluate, locate, use and create information effectively to achieve their personal, social, occupational and educational goals. UNESCO's Information for All Program (IFAP) adopted that the definition of information literacy from the Alexandria Proclamation of 2005; "Information Literacy is the capacity of people to: Recognize their information needs; Locate and evaluate the quality of information; Store and retrieve information; Make effective and ethical use of information, and Apply information to create and communicate knowledge" (Catts and Lau 2008).

According to (Julien 2002) information literacy skills as the ability to make efficient and effective use of information resources. So that an information literate person must have specific online search skills, including the ability to choose appropriate search terminology, build a logical search strategy, and evaluation of information appropriately. (Ojedokun and Owolabi 2003) noted that an information literate person should be able to: recognize the need for information, formulate questions based on their information needs, and understand that; accurate, relevant and complete information. It is the basis for intelligent decision making, identify potential sources of information, and develop successful search strategies, access sources of information from all media. It helps with information evaluation, organizes information for practical application, integrates new information into existing knowledge, and uses information in critical thinking and problem solving. All the skills listed are required by any user; many students, especially those with the quest to make a productive impact on education and research. Having the appropriate information search skills allows students to benefit from the huge amount of information which is available electronically either online or offline. (Adeniran and Onuoha 2018) indicate that students who possess information search skills in today's information technology world are more likely to engage in the use of e-resources to improve the quality of their academic work. (Adeniran and Onuoha 2018) noted that in today's information technology age, students who have an information search skill are more likely to be involved in the use of e-resources to improve the quality of their academic work.

According to the Association of College and Research Libraries document on "Information Literacy Competency Standards for Higher Education 2000" the characteristics of an information literate person are: determine when information is needed; access the needed information effectively and efficiently;

incorporate selected information into one's knowledge base; use information effectively to accomplish a specific purpose; understand the economic, legal and social issues surrounding the use of information and access and use information ethically and legally.

A number of international organizations such as the Association of College and Research Libraries (ACRL) of the American Library Association (ALA), Society of College, National and University Libraries (SCONUL) UK, Australian and New Zealand Information Literacy Institute (ANZIL) have described Information Literacy (IL) from different angles. (ACRL 2000), describe Information Literacy (IL) is a set of capability requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information. From SCONUL point of view, Information literacy (IL) is a set of seven pillars of skills: identifying (recognize information need), scoping (identifying information gap and recognize ways of addressing), planning (construct strategies for locating information and data), gathering (locate and access the information needed), evaluating (review, compare and evaluate information), managing (organize, apply and communicate information), and presenting (synthesize and create information) of information (Bent and Stubbings 2011). ANZIL revealed that, Information literacy is a prerequisite for participative citizenship, social inclusion, the creation of new knowledge, and personal, vocational, corporate and organizational empowerment, as well as learning for life (Bundy 2004). Even if all of these organizations are provided different description the concept of IL, but the objective of those organizations are similar.

2.3. Components of Information Literacy

Information literacy is a set of skill and competencies for identifying, finding, accessing, locating, evaluating, using and communicating information the needed information to solve problems or tasks at hand. It has many components like computer literacy, library literacy, media literacy, network literacy, digital literacy, visual literacy etc. These elements are not only empowering students to succeed in their academic careers and become independent lifelong learners, but also enable successful entrepreneurs in various sectors of the economy.

Computer Literacy: Computer is a tool that facilitates and extends our abilities to learn and process information. Computer literacy is generally thought of as familiarity with the personal computer and the ability to create and manipulate documents. Computer literacy is a fundamental part of information literacy to locate, evaluate, and use information. According to (Kubiatko 2007) computer literacy is one component of information literacy and it is a precondition for the development of information literacy skill. Computer literacy defined as having a basic understanding of a computer to create, access, organize,

manage, and use digital resources. In order to use computing devices having a basic understanding of what is computer and how it operates is necessary, which includes both computer hardware and software.

Hardware: The physical components of the computer which includes the monitor, keyboard and mouse, and all of its internal components that allow you to store, receive, and process information and data.

Software: a set of instruction codes informing the hardware what action to perform (that is Software applications, both system software: computer operating system and application software: Microsoft office; Microsoft Word (word processing), Excel (spreadsheets and data calculation))

The key characteristics of our century is exponentially the increasing of electronic information resources too fast from various sources in different form and format on the Internet. In such atmosphere people should be create, develop and update information-based professional. Unless and otherwise, their professional skills and statutes become questionable. In our electronic information age computer provides an environment to create, manage, share and transfer any kind of information. In this virtual environment, getting essential information fully and on time; making the use of obtained information for personal and professional development (Konan 2010).

Network Literacy: It is a closely related term to computer literacy, but is still evolving. Network literacy is the capability to locate, access, and use information in a networked environment such as the World Wide Web (College, Libraries, and Association 2000). Network literacy, the ability to identify electronic information from the networked information environment through network technology. It is an essential skill for human being to live successful and productive life in networked information society.

Digital Literacy: In the rapid and continual development of digital technology, individuals have required digital literacy skill to perform tasks and activities in the digital environment. It is the ability to interpret and use information in multiple formats from a wide range of sources when it presented via a computer. (Akayoglu et al. 2020) cited on the study digital literacies means the ability of peoples to know how to operate digital technologies and to use them safely, wisely and productively. Digital literacy enables to critically examine the wide range of resources that are available through online (College, Libraries, and Association 2000). It provides individuals have understanding, attitude and ability appropriately to use digital tools and features, identify, access, manage, analyze and synthesize digital resources, create new knowledge, create media expressions and communicate with others.

Digital literacy is the ability to locate, organize, understand, evaluate, and analyze information using digital technology. It involves a working knowledge of current high-technology, and an understanding of how it can be used. Further, digital literacy involves a consciousness of the technological forces that affect culture and human behavior. A digitally literate person can communicate and work more effectively, especially with those who possess the same knowledge and skills (“Wikipedia” n.d.).

Tool Literacy: The ability to understand and use the practical and conceptual tools of current information technology relevant to education and the areas of work and professional life that the individual expects to inhabit (E. Baro and Fyneman 2009).

2.4. Information Literacy Model

At different times various IL teaching and learning models have been developed around the world to understand, explain, and to build public awareness of information literacy. Many of these models have been designed for use in schools and universities to increased Information literacy awareness. Information literacy has a greater impact and it allow a better chance for success in any activities (Sayers 2006).

(Uribe-Tirado and Castaño-Muñoz 2012) cited on the study, Information literacy model is a framework and its’ aim to define which level of competence individuals should be master before he or she can acquire the skills that make an information literate person. In order to achieve the information literacy goals several information scientists, scholars, theorists, organizations, associations, individual or group researchers and academicians have attempted to develop different models at different time. These models help learners, information user, students, librarians and teachers reach their ultimate goal of the education, with a specific guided plan (Ranaweera 2008).

2.4.1. Seven Pillars of Information Literacy (SCONUL, 1999)

In 1999, the Society of College, National and University Libraries (SCONUL) Advisory Committee on Information Literacy developed the Seven Pillars of Information Literacy model. Since then, the model has been adopted by librarians and teachers around the world as a means of helping them to deliver information skills to their learners. This model is the core of information literacy development, particularly in higher education institutions. It reflects a behavioral framework of information literacy and aims to provide a practical working model of information literacy that is useful for programs in higher education. The model has seven basic skill the ability to recognize a need for information, the ability to distinguish way in which the information gap may be addressed, the ability to construct strategies for locating information, the ability to locate and access information, the ability to compare and evaluate information obtained from different sources, the ability to organize, apply and communicate information

to others in ways appropriate to the situation and the ability to synthesize and build upon existing information, contributing to the creation of new knowledge (Bainton 2001).

2.4.2. Research Process Model (Stripling and Pitts, 1988)

The Research Process Model or REACTS model is originally developed by Barbara K. Stripling and Judy M. Pitts as a model for preparing assignments. This model encompasses six levels in the information seeking process. The first level is Fact-finding; at this stage the learner seeks specific information on a topic from various sources and create a report based on the results what they obtained. The second level is Asking and searching; at this stage the learner should be informed about ‘who’, ‘what’, ‘where’ and ‘when’ questions and seek information to answer these questions. The third level is examining and organizing; At this stage you need to ask more in-depth questions about why and how, and then organize the information to fit your specific assignment needs. On the fourth stage, evaluating and deliberating information; at this stage you are expected to determine the information you receive based various criteria such as authority and bias. At the fifth stage integrating and concluding information; at this stage you have the opportunity to give your own opinion and draw your own conclusions based on the information you receive. Finally conceptualizing; at this level you are expected to create original solutions to the problems that were posed (Bothma 2008).

2.4.3. The Big6 Information Literacy Model (Eisenberg and Berkowitz, 1990)

The Big6 information literacy model is one of the most popular models. It was developed by two librarians in the United States, Mike Eisenberg and Bob Berkowitz. It is a widely known and problem-solving-approach to teaching information literacy skills. This model is important in decision making, especially when faced with an information problem. This model comprises 6 stages with two sub stages under each stage of the information problem-solving process (“TheBig6.Org” n.d.).

1. Task definition: At this stage, Students determine exactly what the information problem is and the specific information which is related to the problem.
 - 1.1. Define the information problem
 - 1.2. Identify the information need
2. Information seeking strategies: Once when the problem is defined in the task definition, then action goes to all the possible Information sources.
 - 2.1 Determine all possible sources
 - 2.2 Select the best sources
3. Location and access: In this stage information searching strategy begin and decide appropriate searching strategy.
 - 3.1 Locate sources

3.2 Find Information within sources

4. Use of information: At this stage, individual, be able locate and access the sources and decide the invaluable information through read, listen and view.

4.1 Engage

4.2 Extract relevant Information

5. Synthesis: Synthesis is very complex; it involves several sources and have varieties presentation format.

5.1 organize from multiple sources

5.2 Present the information

6. Evaluation: Evaluate the information problem solving process in terms of effectiveness and efficiency.

6.1 Judge the product (effectiveness)

6.2 Judge the process (efficiency)

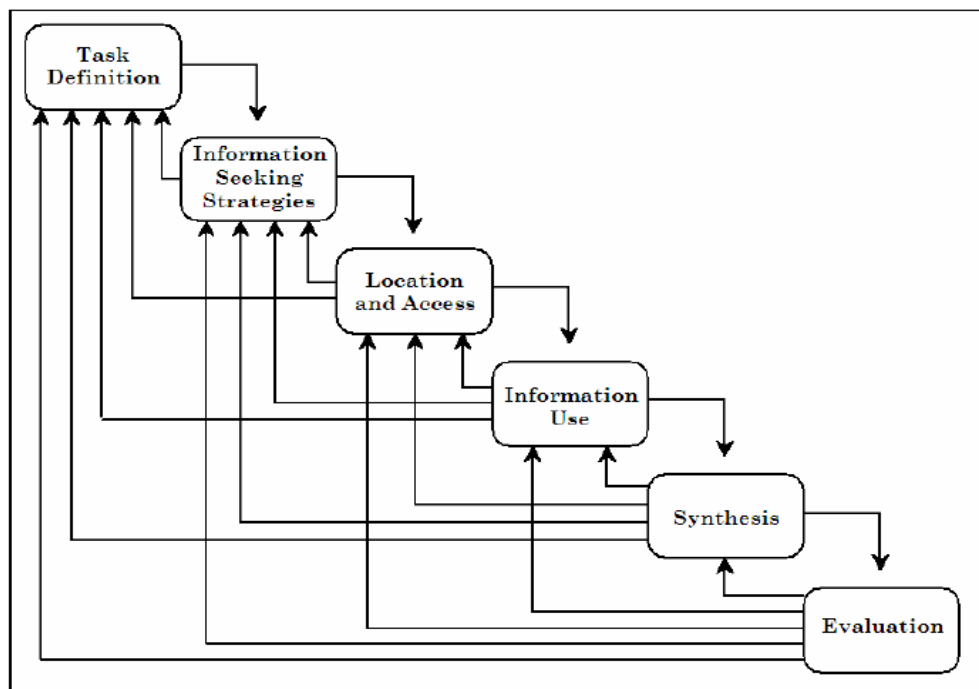


Figure 2. 1 The Big6 as a Feedback Process (Eisenberg 2008)

2.4.4. Information Search Process (Kuhlthau 1993)

Information Search process model (ISP) is developed by Kuhlthau. This model describes that the overall and general experience in the processing of information seeking as a series of thoughts, feelings, and actions from the user's perspective. The model reveals a search process in which a person is seeking meaning in the course of seeking information. This model demonstrates the users' approach to the

research process and how the users become confidence increases. The model comprises six stages which include initiation, selection, exploration, formulation, collection and presentation (Kuhlthau 2005).

Initiation: In the first stage when the person becomes aware of gap in knowledge, lack of understanding and feeling of uncertainty. The task is recognizing the needed information and the thoughts center is contemplating the problem, comprehending the task, and relating the problem to prior experience and personal knowledge.

Selection: In the second stage the task is to identify and select the general topic to be investigated and the approach to be pursued. Thoughts center on weighing prospective topics against the criteria of task requirements, time allotted, personal interest, and information available.

Exploration: In the third stage the task is to investigate information on the general topic to personal understanding and to form personal point of view sufficiently informed about the topic. This stage is considered the most difficult in ISP when the information encountered can increase uncertainty prompting a dip in confidence.

Formulation: In the fourth stage formulation is the turning of the ISP, when feelings of uncertainty diminish and confidence increase. In this stage the task is to form a focus from the information encountered. Thoughts involve identifying and selecting ideas in the information from which to form a focused perspective of the topic. The topic becomes more personalized at this stage if construction is taking place.

Collection: In the fifth stage the task is to gather information related to the focused topic. Thoughts center on defining, extending, and supporting the focus. Actions involve selecting information relevant to the focused perspective of the topic and making detailed notes on that which pertains specifically to the focus.

Presentation: on the final stage the task is to complete the search then prepares the findings to present. Thoughts involve culminating the search with a personalized synthesis of the topic and summarize the search.

2.4.5. Pathways to Knowledge (Pappas and Tepe 2002)

Pathway to knowledge model was developed by Pappas, Marjorie, and Ann E. Tepe. This is a process model in which someone wants to find, use and evaluate information. Pathway to Knowledge Model encourages students to continuously search and re-evaluate their information process. This model consists

of six steps, namely appreciation and enjoyment, pre-search, search, interpretation, communication, and evaluation (Pappas and Tepe 2002).

Appreciation: At this stage, students explore a topic for information seeking through sensing, viewing, listening, reading and enjoyment.

Pre-search: In this stage, students explore what they already know and what they want to know about the topic and establish a focus; develop an overview, and explore relationships.

Search: This stage is when students seek appropriate sources, plan and implement a search strategy, identify information providers, select information resources and tools and seek relevant information.

Interpretation: At this stage student assess useful information and reflect on research results to develop personal meaning and interpret information.

Communication: Students at this stage, organize and apply their research in an appropriate format.

Evaluation: This stage involves thinking about the product and process through evaluation. Ideally, this occurs at each stage.

Table 2.1 Summary of Information Literacy Model

	REACTS Model	The Big6 IL Model	Information Search process	Pathways to Knowledge	Seven Pillars of IL
An information-literate person is able to:					
1	Fact-finding	Task definition	Initiation	Appreciation and Enjoyment	Recognize a need for information
2	Asking and searching	Information seeking strategies	Selection	pre-search	Distinguish way in which the information gap may be addressed
3	Examining and organizing	Location and access	Exploration	Search	Construct strategies for locating information
4	Evaluating and deliberating	Use of information	Formulation	Interpretation	Locate and access information

5	Integrating and concluding	Synthesis	Collection (information location)	Communication	Compare and evaluate information obtained from different sources
6	Conceptualizing	Evaluation	Presentation	Evaluation	Organize, apply and communicate information to others in ways appropriate to the situation
7	-	-	-	-	Synthesize and build upon existing information, contributing to the creation of new knowledge

To clarify from the above table the main objectives of those models tell us as about the practice of information literacy in fulfilling a particular task. It enables individuals to achieve a certain information literacy qualification with the goal of implementing information-seeking, improving the investigation process, solving problems, processing information, guiding research, and identifying the information needed.

This study focuses on the seven pillars of the literacy model as a central paradigm and closely resembles what students actually experience in their daily information processes.

2.4.6. The Seven Pillars of Information Literacy (SCONUL, 1999)

In 1999, the Information Skills Taskforce of the Standing Conference of National and University Libraries in the United Kingdom (SCONUL) developed an effective conceptual model the "Seven Pillars of Information Literacy". It is viewed as a progression of basic information literacy skills which is from novice to more sophisticated ways of understanding and using information which is to expert (Sayers 2006). This model divided into two core set of skills:

A. Knowing how to locate and access information

The first four pillars comprise the basic skills required to locate and access information:

- 1) Recognize our information need - knowing what is known, knowing what is not known and identifying the gap
- 2) Distinguish ways of addressing the gap - knowing which information sources are likely to satisfy the information need
- 3) Construct strategies for locating information - in the first instance, knowing how to develop and refine an effective search strategy
- 4) Locate and access information - knowing how to access information sources and search tools to access and retrieve information

B. Knowing how to understand and use information

The remaining three pillars comprise the more advanced skills necessary to understand and use information effectively:

- 1) Compare and evaluate - knowing how to assess the relevance and quality of the information retrieved
- 2) Organize, apply and communicate - knowing how to associate new information with old, to take actions or make decisions, and ultimately how to share the outcomes of these actions or decisions with others
- 3) Synthesize and create - knowing how to assimilate information from a variety of sources for the purpose of creating new knowledge

The Seven Pillars of Information Literacy model is presented in the *figure 2.2* below. Other information literacy models' discussions shall be based on this model. Each skill will be discussed and compared with the stages of other models.



Figure 2. 2 SCONUL Seven Pillars Model for Information Literacy (SCONUL 1999)

2.4.6.1. The Ability to Recognize a Need for Information

At this stage, the user in this case a student, with no clear understanding of his or her information needs. Need is something that a human being requires in order to function effectively. An information need is present when a gap, uncertainty or deficiency in a person's cognitive state is recognized. (Kituyi-Kwake 2007) that this deficiency prevents a person from making sense of the surrounding world, and to this end it is described as an "anomalous state of knowledge" (ASK), in other words a gap in one's ability to make sense of a situation

The Big6 Skills model Chipeta cited (Eisenberg and Berkowitz 1990) gives the application phase of information literacy skill is 'task definition'. In task definition, a student actually determines what the problem is and the specific information needs related to the problem. In other words, the phase asks what information is needed in order to solve the problem at hand; it involves questioning. This is same to that 'task initiation and selection' in Kuhlthau's Information Seeking Process Model in which an individual first becomes aware of the lack of the knowledge necessary to accomplish an assignment, which is followed by feelings of uncertainty and apprehension. At this stage, the task is to identify the need for information. A person is determined to obtain information to solve the problem, he or she considers (Chipeta 2010).

In Kuhlthau Information Search Process Model the third stage is exploration, it matches with the first stage of the Seven Pillars model. At this stage the student examines information with the view to finding a focus. Thoughts involve becoming informed about the general topic, identifying multiple focuses and inability to express the exact information needed. The student feels confused, suspicious, uncertain, and sometimes threatened and then takes action by reading to become informed, read and taking notes and making bibliographic citations. Strategies used by a student include conducting a survey of notes, listing possible topics of the item, and combining several items. The student then proceeds to the next stage, which is finding ways in which the information gap can be addressed (Chipeta 2008).

Pappas and Tepe (Pappas and Tepe 2002) consider in their model, the ability to recognize a need for information stage as 'appreciation and enjoyment'. Appreciation and enjoyment involve questioning the information need. Appreciation promotes curiosity and imagination, which lead to discovery in an information- seeking activity. Academics and other information users go through the stages of information seeking by observing, browsing, listening, reading and sensing.

In Strippling and Pitts' Research process model, also known as 'Fact finding', this phase emphasis the selection of a broad topic, getting an overview of the topic, is regarded as recalling which entails fact-finding such as reporting on the information. Then the subject is narrowing and the objective is

developing. In other words, it involves interpreting, asking, and searching questions, for example, whether the selected item is in line with the user's research interests and finding answers to such questions. It also entails exploring a variety of literature by reading, viewing and listening (Chipeta 2010).

2.4.6.2. The ability to distinguish ways in which the information 'gap' may be addressed

The second pillar of the information process in the seven pillars of the information literacy model forces the information user to learn about the appropriate types of resources, which are print and non-print information sources, and select information sources that complement users' research task and an ability to understand issues affecting accessibility of sources (SCONUL 1999).

In Kuhlthau's Information Search Process Model is the 'formulation' this stage deals with the second stage of the seven pillars of the information literacy model, which involves designing questions to guide research and planning for a research product and also, in Pitts and Strippling Research Process Model.

In the Pathways to Knowledge model of Pappas and Tepe is pre-search phase, the phase enables searchers to make a link between their topic and the knowledge that they already have with the view to explore the relationships among subtopics. This makes the searchers brainstorming and questioning on what they know about their topic and what they want to know. Kuhlthau notes that on her model, exploration is a difficult stage for users and the most misunderstood by the intermediaries. At this stage feelings of confusion, uncertainty and doubt are frequently increased. The task is to investigate information on the general topic in order to expand personal understanding. Thoughts center on becoming oriented and sufficiently informed about the topic to form a focus or a personal point of view. Actions or activities include finding common sense information, reading information, and adding new information that is already known. The formulation involves a greater focus on the more specific subject within the subject; the sense of uncertainty decreases while confidence increases. The task is to focus on the information encountered in the investigation. Ideas are more clearly defined as they form a centralized view of the subject (Chipeta 2010).

2.6.4.3. The ability to construct strategies for locating information

The third step in the Seven Pillars of Information Literacy model implies articulating information needs to match the available information sources, developing a systematic method appropriate for the information needs, and understanding the principles of the construction and generation of databases.

At this stage 'information seeking strategies' from the Big6 Skills model and 'search' in the Pathways to Knowledge model. During the information seeking strategies to gather ideas or the right amount of information, the student should consult literature such as journals, Internet resources, and books on the subject. This would mean selecting a wide range of information sources and prioritizing the best of all the

possibilities. This is also achieved through access to information and the need to evaluate student browsing CD-ROMs, databases, online public access catalogs (OPACs), and a variety of print and electronic resources (Chipeta 2010).

2.4.6.4. The ability to locate and access information

The fourth stage of the seven pillars of the information literacy model is that the students' or information users should be able to develop an appropriate searching technique which includes use of Boolean operators, communications and information technology, appropriate indexing and abstract services, appropriate search technology such as citation, indexing and databases (SCONUL 1999). Other models which are supported, these include the Big6 skills' 'location and access', 'information location' in Kuhlthau's Information Search Process, 'identifying, analyzing and evaluating resources' in the Pitts and Stripling's Research Process Model and 'searching' in the Pathways to Knowledge Model.

Eisenberg and Berkowitz refer to this step as 'locating and accessing information'. It is the students' choice of the most appropriate research methods by developing a research plan and identifying keywords, synonyms, and related terms for the necessary information. Then to select information the student constructs a search strategy using appropriate commands such as Boolean operators ("AND", "OR" and "NOT"), truncated and proximity operators for the database, search engine, use of OPAC, indexes and abstract for selected information. The students proceed to retrieve information in a variety of formats using different information access tools which includes classification schemes, and other systems such as call number systems or indexes to locate information resources from their sources.

On the other hand, in the Kuhlthau model this stage refers to 'collection'. At this stage, the task involves gathering relevant information on the focus topic. The student has a clear understanding of direction and can specify the need for specific information. Ideas are being explored to support the focus area, define and / or expand the focus area through information, gather relevant information and organize the information in the notes. At this stage, feelings of confidence increase significantly as uncertainty decreases and interest in the project intensifies. Activities will focus on using the library and other resources to gather important information and take detailed notes with bibliographical references. Strategies that are used include using keywords to find important information; widely searching various types of materials, such as references, periodicals and non-fiction; using indexes; and requesting assistance from the librarian. This step is equivalent to finding, analyzing, and evaluating resources in the research process models, in which a student asks himself or herself whether the sources we found are sufficient and usable.

In the search stage of the Pathways to Knowledge Model, Pappas and Tepe describes that users will identify appropriate information providers such as libraries, records and archive canters, museums and; Select information sources and tools such as indexes, people, the Internet, the media and reference resources; and then plan and implement a search strategy to find information relevant to their research question or information need. They achieve this by scanning, interviewing, and verifying information sources, and by extensively searching and browsing the recording information to determine the relevance of the information.

2.4.6.5. The ability to compare and evaluate information obtained from different sources

The fifth stage of the seven pillars of the information literacy model shows that students should be aware of bias and authority issues, the peer review process of scholarly publication, and the acquisition of sufficient information to meet the information needs (SCONUL 1999). This is equivalent to 'evaluation' in the Big 6 skills model, 'search closure' in Kuhl's information search process, 'evaluating evidence / note taking and compiling bibliography' in the research process model, and 'interpretation' in the path way to knowledge model.

Eisenberg and Berkowitz suggest that the student evaluates the quantity, quality, and quality of search results, identifies gaps in the retrieved information, and decides whether to revise the search strategy. When the information is needed, the student repeats the search using a revised strategy, summarizing the main ideas from the information gathered and from various sources and assessing the reliability, validity, accuracy, authority, timeliness and attitude of the information. Compares information. The student must be able to identify the cultural, physical or other context in which the information is created and understand the impact of the context when interpreting the information. In 'search closure', Kuhlthau mentions that there is work to do in search of information (Chipeta 2010).

2.4.6.6. The ability to organize, apply and communicate information to others in ways appropriate to the situation

This step enables students or researchers to cite bibliographies in their academic work, create a personal bibliography system, apply information about the problem at hand, communicate information effectively and understand copyright issues and plagiarism (SCONUL 1999). It is similar to 'information use' in the Big 6 skill model and 'communication' in the Pathways to Knowledge Model. According to Pappas and Tepe, the communication phase allows students to organize, apply, and present new knowledge that applies to their research questions or information needs. In applying information, students choose the appropriate form of communication and respect the intellectual property. In knowledge sharing, they create, design, edit, revise and use the most effective medium and convey the information.

In communicating the information to others, the student must understand the information on cultural, moral, legal, and socio-economic issues and identify and clarify issues of privacy. Further, the student should focus on security in print and electronic environments, identify and clarify issues related to free vs. Fee-based information, identify and discuss censorship, demonstrating awareness of intellectual property and fair use of the copyrighted material (Chipeta 2010).

2.4.6.7. The ability to synthesize and build upon existing information, contributing to the creation of new knowledge

According to Eisenberg and Berkowitz in the Big 6 Skills Model ‘synthesis’, synthesis of information means that the student gathers information together and acts as he or she already knows. The student chooses a communication medium and format that best supports the product and intended audience. This entails the draft to combine different types of information into a coherent whole, and revises the draft several times to improve understanding before presenting it. In Kuhlalu's model, this stage comes into under presentation. The task is completing the search and the assignment. If the search goes well and the frustration does not go away with satisfaction, relief is common. The idea of concluding the search is centered on personal understanding of selected aspects of the subject under the study. Finally, the student should combine the concepts with potential evidence into potentially useful basic statements and integrate prior and new information, including words and ideas that support the goals of the project.

2.5. Need of Information Literacy Skill

The primary goal of Information Literacy (IL) is to develop powerful users to use information from various sources. Basically, information is available through libraries, community resources, special interest organization, media and the internet. For this reason, individuals receive information in an unfiltered format and raising questions about its validity, validity and reliability (Vellaichamy 2017). So, it is considered as a tool for lifelong learning. Information literacy requires all things, all learning environments and all levels of education (Amudhavalli 2008). This allows learners to master content and expand their research, become more self-directed, and gain more control over their own learning. IL has a great significance for economic development, educational attainment and social, cultural and personal well-being. It emphasizes the skills, attitudes and values needed to efficiently explore, use, evaluate, manage, synthesize and use information.

Information literacy is important in the current context of information explosion and uncertainties about the authenticity, validity, reliability, and variety of information. Students are faced with different information choices and its origins. Above all, it is very difficult for students to choose everything they need to know in their field of study. On the other hand, students are faced with an expansion of information about the quality of uncertainty in the environment. Because of these challenges, students

face many difficulties in completing their academic work, business, career and community life. Therefore, information literacy involves the critical skills needed to become independent lifelong learners. For students, information literacy skills lead to independent or student-centered learning rather than relying on the teacher to answer questions or problems. These lead to greater responsibility towards their own learning, which helps to them a dynamic learner and creator (Mokhtar and Majid 2006).

According to (Chagari 2005) it is very difficult to live a quality and happy life without becoming an information literate in the contemporary information society. Information literacy provides people with the opportunity to gain knowledge and motivation to learn throughout life. The “Alexandria Proclamation” states that Information Literacy is the core of a lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a fundamental human right in a digital world and promotes social inclusion of all nations. Lifelong learning allows individuals, communities and nations take advantage of emerging opportunities in a globalized environment developed for the purpose of sharing and for the benefit of partnerships. It helps them and their organizations to deal with technical, economic and social challenges, address risks and advance the well-being of all (Garner 2006). Whereas according to Prague Declaration, 2003 “Information Literacy encompasses knowledge of one’s information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; It is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning.” Lifelong learning a continuous learning and it is essential in the changing world for survival.

In fact, the explosion of information, the proliferation of Internet facilities, and the data smog can cause many difficulties for individuals to locate, evaluate, use and communicate information. (Shenk 1997) describe that data smog refers to the idea that too much information can cause an obstacle in our lives. The emergency of data smog is due to the huge amount of information, the rapid speed of information from different directions, the need to make fast decisions, and the feeling of anxiety that we are making decisions without having all the information that is available. For this reason, Information literacy is the solution to data smog. Because it allows us, especially for students to build a skill to handle the fast-increasing information to use their educational and economical purposes more effectively. It enables to know when need information, where to find, and how to evaluate, use and communicate it effectively and efficiently. And also to increased ability to think critically, interpret information and make informed judgments (Chakrvarty 2008).

In the twenty first century, lifelong learning becomes one of the main themes, particularly, in the higher education institutions. Therefore, by developing aspects of reasoning and critical thinking, students should be made aware of their learning ability and skills. Hence, Information literacy skills help students achieve this goal in a broader sense in student-centered learning environment (Ranaweera 2008).

(Idiodi 2005) further writes that Information literacy instruction helps users to identify and select the information they need, and use appropriate search strategies in evaluating, organizing and synthesizing the information thus acquired into a meaningful state. Critically evaluating, understanding and using information in the present-day context is challenging, and information literacy skills can help students move forward with to master content and give to them the confidence to proceed the inquiry.

Information Literacy has been recognized by civil society and governments as an effective way of bridging the digital divide by providing people with the skills to know when they need information and locate it effectively and efficiently from a variety of sources. It allows individuals to recognize their need, to create strategies and use information effectively (Sayers 2006). The term digital divide is used to describe the inequality in accessibility and utilization of ICT infrastructure between different regions/countries in the world. Therefore, Information Literacy links the digital divide and closing the gaps.

2.6. Information Literacy Practice in Some Developed Countries

In developed countries the practice of information literacy has a great attention and encourage it especially in higher educational institutions. Due to these countries, develop different Information Literacy Model, standards, guidelines, principles and design curriculum on the ground that individuals' who have a common understanding and addressing information problems. Information literacy activities begin in the United States as a principle by the recommendation of the American Library Association Presidential Committee on Information Literacy, 1989 (ALA 1989). In the United States most institutions have adopted the principle of integrating information literacy in their own locally written curriculum. In the United Kingdom Information literacy activities start in 1998 with the establishment of the Seven Pillars of Information Literacy Skills developed by SCONUL. It provided a framework for a variety of information literacy experiences and has also been used as a benchmark for assessing the information literacy skills of students; it is yet to establish a defining model of information literacy for the United Kingdom (Webber and Johnston 2003). The trend of Information literacy practice in Australian and New Zealand; they create an Information Literacy Framework (Bundy 2004), which helped them embedding information literacy practice in the curriculum of higher education. Australia spent a considerable amount of money on Information Literacy education at all levels to foster learning and better Australia in the 21st

century. Australia has contributed regionally and globally in promoting information literacy by organizing and hosting national and international conferences (Bundy 1998). The first conference is entitled “Information literacy: The Australian agenda” which was held in 1992, the second conference is “Learning for life: information literacy and the autonomous learner” which was held in late 1995 and the third one is “Information literacy: the professional issue” held in December 1997. Advocacy initiatives have been undertaken by organizations like the Australian and New Zealand Institute of Information Literacy (ANZIIL), the Australian Library and Information Association (ALIA), and the Australian School Library Association (ASLA).

In Denmark, information literacy was introduced in 1998 by Elizabeth Arkin (Skov and Skærbak 2003). The major factor for its introduction was the growth of information and it requires education in retrieving, sorting and using information rather than the need of information by the students. Therefore, in Denmark Information literacy education program is involved as a stand –alone education in most higher education institution. (Victoria Lawal 2009) cited in the study the practice of information literacy in China started from in 1984 in the form of educational programmed called Literature Retrieval. The aim of the program was basically to inculcate in students a mastery of the preliminary methods of computer-based retrieval systems which include how to select databases, search strategies and how to analyze search results.

2.7. Information Literacy Practice in Some African Countries

The practices of information literacy have been involved in African countries like Nigeria, South Africa, Kenya, Tanzania, Uganda, Botswana and Namibia. And also, several literatures are published regarding about information literacy at different time by organizational institution, individuals and educational institution. These countries are emphasized the need of information literacy for the Students to become an information literate person as a result of being able to locate, access, evaluate, manage, synthesize and use information effectively while the result is that much not fruitful. According to (Sithole, Chisita, and Jagero 2015) reveal that on the study developing countries are suffering low utilization of resources due to lack of information literacy skill. Similarly, (Vellaichamy 2017) argue that developing countries face many problems to develop their IL programs. The main problems facing these countries are traditional education policy, lack of manpower required in the library and lack of financial constraints and administrative support. Unfortunately, the education system in many developing countries does not promote student initiative and critical thinking. Furthermore, the ratio of students to educators is disproportionate, and educational institutions lack basic facilities such as functional classroom buildings, adequate computer labs, and library facilities.

2.7.1. Kenya

In Kenya different information literacy programs are provided in different Kenyan Universities. These include library orientation, library instruction courses, personal instruction or reference service, and use of library manuals and guides. Kavulya has conducted at four Kenyan universities which includes Catholic University of Eastern Africa, United States International University, University of Nairobi and University of Kenya traced that in all of the four universities library orientation is mandatory for new admitted students to the university the purpose is to aware the libraries facilities. In Kenyan Universities, information literacy programs are taught to undergraduate students in the form of a communication skills course. In this course, students are taught a variety of skills, including library reading, as well as writing skills (Kavulya 2003).

2.7.2. Nigeria

Information literacy practice in Nigeria Universities had existed in various education programs such as library instruction, library orientation and bibliographic instruction. The method of instruction has been on a one-on-one basis and the use of manuals and guides, the aim of which is to familiarize students with library facilities and services. This program was eventually integrated into the General Studies course offered as a compulsory credit-earning course (Idiodi 2005).

2.7.3. Tanzania

The practices of information literacy in Tanzanian higher education relatively new. However, like the most worldwide Universities, Tanzanian Universities Libraries offer information literacy instruction to the user on how to use information resources. Methods used for teaching IL include library orientation, hands-on practice, seminar presentations, leaflets and information posted on web pages to guide students. Information search skills, use of various library facilities, information evaluation, and use of various sources of information and citation and referencing form core aspects taught as part of IL instruction (Lwehabura and Stilwell 2008).

2.8. Electronic Information Resources

Various descriptions have been gleaned from different literature about electronic resources. According to (Haridasan and Khan 2009) electronics resources are resources in which information stored electronically and accessible through electronic system and network. It is any electronic product in various publishing format such as OPACs, online database, CD-ROMs, e-journal, e-book, internet sources, e-mail publishing, wireless publishing, electronic link and web publishing. The Library of Congress (AACR 2008) defines EIRs as “any work encoded and made available for access through the use of a computer”. These comprise electronic data available by (i) remote access and (ii) direct access (fixed media, such as discs/disks, cassettes, cartridges). (Saye 2001) indicate that, electronic information resources (EIRs) as

those resources that are generated through some electronic medium and made available to a wide range of viewers both on-site and off-site via some electronic transferring machine or the Internet. (Ukachi 2013) state that 'electronic information resources' as a term, is usually interchangeably used with such other terms as 'electronic resources', 'virtual resources', 'online resources', and 'digital resources'. (Ukachi 2015) describe that, electronic resources are all the information materials that can only be accessed electronically, with the use of Information Communication Technology (ICT) facilities. These resources include all electronic collections in the form of e-books, CD-ROM databases, online databases, e-journals, online public access catalogues (OPACs), Internet resources, multi-media resources and similar.

The involvement of Information and communication Technology electronics resources rapidly evolving and accepted in the University community. (Otunla 2015) stating that electronic information resources have gained wide acceptability among university scholars for their ease of use, multi-access capability, unrestricted access to information, the ability to browse the web and timeliness. (Ukachi 2015) revealed that recently, electronic resources have gained explosively popularity and patronage in the university environments as a result of its demonstrated and incontrovertible usefulness in teaching, learning, and research. While, due to the rapid technology change and proliferating of electronic information resources students encountered diverse and abundant information choice in their academic studies. Hence, to solve these problem students have need well Information literacy skill. Therefore, electronic information resources and information literacy skill are an inseparable in this digital world. According to (Julien 2002) information literacy is the ability to use of information sources, efficient and effective, and the information literate person must possess specialized online searching skills, including ability to select appropriate search terminology, create a logical search strategy, and evaluate information appropriately. And also, it entails individuals' ability to know when there is a need for information, how and where to get the information and using such information effectively to fulfill a specific purpose.

Electronic information sources are increasingly important to the academic community as a research tool which is complimented with print-based resources. Electronic information sources have verities and wide range of advantage for individuals in which; access to information that might be restricted to the user due to geographical location, access to more current information, and provision of extensive links to additional resources of related contents (Toyo 2017). Therefore, to utilize e-resources and making good decisions about academic matters and other aspects of daily lives students expected to develop Information literacy skill. (Sivathaasan, Murugathas, and Chandrasekar 2014) reveal that use of electronic information resources for students, research scholars, and teachers they have enhanced accessibility, increased usability, effectiveness and established new ways for information users in using information for

more productivity in their endeavors and provide many benefits to the readers as well as to the knowledge seekers, enabling them to get satisfied with thirst of information needs.

2.8.1. Types of Electronic Resources

Electronic resource is a material encoded for manipulating by a computer device that requires computer access, whether through a personal computer or mobile devices. And also, the items may be accessed either remotely via the internet or locally. The most frequent electronic resources in education institution are:

E-Journals

Information is created and presented in a digital format called an electronic document. These documents are inseparable apart from today's educational system because widely used by students, researchers and teachers. In the digital age, e-journals are the basic electronic information sources in the educational environment community. (Navjyoti and Vasishta 2007) cited, Gail Macmillan defines e-journals as "any serials produced, published and distributed nationally and internationally via electronic networks such as Binet and Internet". According to Jones (W) "e-journals are available electronically via a computer or a computer network, that they may or may not be published in some other physical medium, but that are not CD-ROM's". (Vellaichamy 2017) noted that e-journals contain full-text and bibliographical database. A full-text database contains the entire content of an article such as text, citation information, illustration, diagrams and tables. Bibliographic databases only contain a citation of an article, such as author name, journal title, publication date and page numbers.

E-book

E-book is an electronic text that serves the same purpose as a traditional printed book and covers its entire contents (tables, diagrams, text, and illustration etc.). E-books can be extended with links to other electronic features such as embedded hyperlinks, bookmarks, annotation, text searches and the linking of complex multimedia objects and may also be of great assistance for those with disabilities cited on their study (Gunasekaran and Jeyapragash 2011). An e-book collection is usually set up in an e-database that allows searching for full text within titles and supports advanced search and bookmark functions. E-book is the most preferable compared with printed book due to its portability, upgrade-ability, note making, citation, changeable font size, references, links to other relevant sites, searching etc. Therefore, e-books for the higher education community to help the research scholars, teachers and students by giving more possibility of access.

Electronic Thesis and Dissertations (ETDs)

Electronic thesis and dissertations are research work which is done by research scholars. It is an invaluable resource for research and development in educational institution. The scalability of Information and Communication Technology, make it is possible for anyone to access these resources anywhere from digital environment. (Sengupta 2012) reveal that, “Theses and dissertations are often recognized as the only source for research work that does not find its way into various publication channels. Due to the various benefits of electronic theses and dissertations (ETDs), they are gaining importance over their traditional print format”.

Online databases

A database is an organized data collection of data or that is stored in records in electronic format. These records may refer to sources of information or may include full text of the sources. A database is organized to support the finding of information from books, journal articles, people and conferences.

Web sites

A Web site is a collection of documents written in the HTML code for a person, a business or any other organization. It is usually dedicated to a specific subject or purpose. The main purpose of any website is to provide specific information or services in an organized and user-friendly manner.

2.8. Information Literacy Skills in Using Electronic Information Resources

Information literacy is essentially an indispensable skill as technology is rapidly evolving and also, the advancement of electronic information resources. As the use of electronic information resources continues to rise, especially within higher education institutions of learning, students are expected to develop the required information literacy skills (Odede and Nsibirwa 2018). In this digital world the abundance of electronic information sources increasingly very high, whereas its complexity also seems to that. In this case, anyone has acquired information literacy skill in which successfully search and retrieve pertinent electronic information independently and to utilize effectively. (Adeleke and Emeahara 2016) noted that, “Information literacy skills are imperative for accessing information in this generation of technology advancement that most of the information needed for research can be retrieved from electronic sources”. Information literacy skill has a significant role to utilize electronic resources because according to (Singh, Ogbonnaya, and Ohakwe 2011) one of the reason in which graduate students unable accessing, retrieving and evaluating electronic information resources in academic libraries due to that lack of computer use skill as well as English language skill. Because (Catts and Lau 2008) indicate that language is a key factor to access information. Individuals who speak English language have a wider pool of information in the field of knowledge due to the dominance of English, especially in an electronic

database. Therefore, Information literacy skills have a positive impact accessing the required electronic information, retrieving pertinent electronic information and evaluating.

According to (Spence and Smith 2009) in developed countries, information literacy is a part of the educational curriculum of every student for higher education. It includes understanding how to work with computers, using computer software and hardware to process information, which includes the use of electronic information resources. (Ukachi 2013) noted that information literacy skills are important in using electronic resources because of the proliferation of information presently experienced as a result of a series of developmental activities. The complexity of electronic resources which requires that one possesses information literacy skills in which effectively to utilize electronic information resources. (Ukachi 2015) indicate that the effective utilization electronic resources by students will likely be influenced by the extent of information literacy skills possessed by them.

2.9. Postgraduate Students' Use of Electronic Information Resources

The emergence of new technology environment, students, especially graduate students increasingly use electronic information resources such as online databases, OPACs, e-conference materials, e-mail, full-text databases, e-books and scholarly web sites. (Sivathaasan, Murugathas, and Chandrasekar 2014) indicate that the use of e-resources has been increasing rapidly across the world and users are increasingly expected to use these resources in order to fulfill their requirements. Electronic resources are an important tool for study, learning and research. Electronic resources are provided an opportunity for users as long as to get frequently updated information, to offer advanced search capabilities, flexibility in the storage of the results, and enable access to information without the restrictions of time, users who are restricted due to geographical location or finances and provision of extensive links to additional resources related contents. While according to (Naqvi 2012), to utilize the growing range of e-databases by the users, particularly graduate students and research scholars must acquire and practice the skills necessary to exploit them.

Electronic resources possess a wide range of scope for general communication, information retrieval and instructional delivery to support teaching and research activities in tertiary educational institutions. And also, highly desirable to enhance productivity of work, teaching, learning and research. Several literatures shows relevant studies have been carried out on the use of e- resources by lecturers, research scholars and students world-wide (Thanuskodi 2012). However, according to (Ojo and Akande 2005) on the study “usage and awareness of electronic information resources at the University College Hospital (UCH) Ibadan, Nigeria” revealed that the level of usage of the electronic information resources is low. However, the main problem identified is the lack of information retrieval skills to exploit electronic resources.

In higher educational institution access to electronic information resources are speedily increasing. The growth of information in electronic format forces students to learn how to find, select and use a wide variety of resources. Therefore, to produce qualified individuals, engaged in the lifelong pursuit of knowledge for personal and professional growth, higher educational institution must provide the required skill to link the students with the desired resources he/she they want. For education students can utilize resources effectively a key issue because to help them by amplifying the quality of their teaching to become a professional (Togia and Tsigilis 2010).

2.10. Strategies to Enhance Students Information Literacy Skills

Several programs for enhancing information literacy skill have been published in both traditional and web page environment. Because it plays an important role, especially for postgraduate students to pursuit their academic achievement by accessing electronic information resources. There is a tendency that postgraduate students who possess information literacy skill are likely to achieve their full academic potential. In this information jet age, to enhance students' information literacy skill, it is very important understand different strategies to improve the information literacy skill capability. To build students' information literacy skill, a number of strategies were involved like online information literacy tutorials, integration of information literacy into curricula and information literacy training by Academic libraries. Similarly (Salleh et al. 2011) added some example programs to enhance information literacy skills such as library orientation, bibliographic instruction, information competencies etc.

2.10.1. Online Information Literacy tutorials

To enhance students' information literacy skill in various subject disciplines, librarian should design online information literacy skills modules and tutorials to assist students in the use of information resources in their respective fields. In the modern education system librarians plans and expand information literacy skills and competencies to learners, they have to access information with the help of Information and Communication Technology (ICT) (Akpovire et al. 2019). The IL modules which are available from the webpage of the University library are used to ensure accessibility and easy provision of information resources for students. Subject librarians continuously undertake IL skills training and user awareness programs on available resources in collaboration with faculties and departments as a way of encouraging student learning and research in the institution (Akintunde and Lawal 2014). (Galvin 2005) noted that one of the goals of an academic libraries are promoting information literacy skills on the library web site, students to be experienced in information-seeking behavior.

Information literacy is an indispensable tool in the information rich environment, due to the growth of information sources and the advancement of Information and Communication Technology (ICT). Hence, the importance of as a means of empowering people in all walks of life to access, evaluate and use

information effectively and efficiently to achieve their personal, social, occupational and educational goals (Akpovire et al. 2019). At the University of Botswana, to improve students' information literacy skill, design and offer an online information literacy module to first year students. The online information literacy module was delivered during the second semester through WebCT. The module consisted of six topics using the Australian Capital Territory Library and Information Services information literacy model (Mutula et al. 2006). This model provides six stages for developing information literacy skills, namely:

- (1) defining the task;
- (2) locating resources;
- (3) selecting the most useful resources;
- (4) organizing the information;
- (5) presenting the information effectively; and
- (6) assessing what has been done.

2.10.2. Integration of information literacy into curriculum

Information literacy skills are critical to success in higher education institutions due to the rapid advancement of information technology and information resources. However, the majority of the higher educational institution does not offer formal information literacy classes rather than informal. The traditional, informal library instruction sessions are no longer relevant to equipping students with survival skills in this age of information explosion. Today, students are faced with different challenges of selecting the source, type, and format of information in their personal, professional, and academic lives. The uncertain quality, rapidly increasing volume, plagiarism, and the use of Google as a standard tool for academic research and learning pose serious challenges for students, institutions, and society as a whole (Barton 2016). According to (Klingenberg and Singh 2009) to provide information skill to university students; an integrated information literacy course into the core course is a best way. While academic libraries in particular traditional and conventional universities has been limited to orientation and library instruction, while few libraries have integrated into their course curriculum.

To develop students' information literacy skills and qualities, incorporating information literacy courses into a curriculum very important in terms of short training courses, library orientation, and e-learning programs for self-access learning. The integration of information literacy in the various courses enables students to acquire information skills and apply the knowledge continuously both during their undergraduate and graduate studies. Integrated Information literacy in courses is an efficient model because information literacy is taught as part of a course or as an assignment in the course. Integration of information literacy in a course facilitates the advancement and continual development of learning opportunities. Information literacy that has been integrated and linked to course content is an important

learning tool to enhance their problem solving abilities, lifelong learning, self-directed learning and intelligences decision making (Maitaouthong, Tuamsuk, and Techamanee 2011). (Parker 2003) argue that integrated information literacy program into a curriculum is the most effective way educated information literacy. (Underwood et al. 2010) noted that Information literacy is important due to that, many Institutions are shifting their educational philosophies form teacher-centered teaching to student centered. While it is difficult resources-based learning when students without having the required information skill. Because the formats of educational resources, such as digitization of scholarly publications and the growth in online delivery and other electronic learning resources, require various skills, fluency with information technology and learning skills. Student-centered learning is an emphasis on critical thinking and independent learning. The student-centered approach empowers students to be more responsible for their learning by providing them with the ability for deeper learning and a higher degree of flexibility in lifelong learning.

The integration of information literacy into the curriculum provides an opportunity for the development of students' information literacy skill. In education practice, information literacy can be implemented in various approaches. Basically, there are four main approaches: extra-curricular, stand-alone, inter-curricular and intra-curricular. All of these approaches have the same goal, to improve student's information literacy skills and lifelong-learning to meet their needs in the modern information world.

The extra-curricular approach: IL education is normally taught by the librarians outside of an academic curriculum. It is supplemental to the academic curriculum and not normally linked to any specific academic course. It is not normally assessed, but the formative self - assessment may be provided for immediate feedback to students for the benefit of their own learning (Peacock 2006).

The stand-alone approach: It is taught as an independent curricular course solely devoted to IL as part of the students' curriculum. The stand-alone IL course can be taught by academic staff or librarians or shared by both. It is taught either as a selective course for-credit / non-credit (Wang 2007).

The inter-curricular approach: The IL education is related to academic course related. It is thought conducted in the form of lectures, workshops and/or short courses on basic information skills. It is related to academic curriculum teaching content. Attendance may be required during the course. IL may or may not be assessed (Peacock 2006).

The intra-curricular approach: The IL education integrated into an academic curriculum through academic staff and librarians collaboratively during the design. IL may be taught by academic staff or librarians or by both of them. IL teaching is part academic curriculum. IL assessment can be either

summative and formative mandatory requirements of the unit and/or course, and are weighted accordingly (Peacock 2006).

2.11. Theoretical Framework

This study was adopted the Seven Pillars of Information Literacy skills. The Model was developed by the SCONUL advisory committee on information literacy in 1999. The primary focus of the model is being to produce an information literate individual who would use these skills to improve their information need. This model comprises two building blocks, information technology skills and information skills for the wider concept of information literacy skill. Basically, within the modern-day Information Technology plays a vital role for us to access and organize electronic information resources. On the other hand, information skills also provide some practical concepts of how information is acquired in the real world, organized, disseminated, exploited and use information in the workplaces, business and work of culture. To improve people information literacy skill competencies from novice to expert the Seven Pillars of Information Literacy skills include seven stages of skills to support people and to solve their information problems and each skill contains different sub-skills.

The Seven Pillars of Information Literacy skills Model is presented below in figure 2.3. From the figure, the first stage is “the ability to recognize a need for information”, at this stage the user in this case students, requires to describe their information need related to information problems or to solve the problem at hand. The next stage is “The ability to distinguish ways in which the information ‘gap’ may be addressed” this step requires students being knowledgeable about both print and electronic information resources, selecting information resources that would go to achieve your tasks and recognized the issues which influence the accessibility of sources. The third stage is “The ability to construct strategies for locating information”, this stage implies that students are able to articulate information needs to match against resources, develop a systematic method appropriate for the need, and understand the principles of construction and generation of databases. The fourth stage is “The ability to locate and access information”, this step requires the students must be develop an appropriate searching technique, which includes that Boolean operators, communication and information technologies, appropriate indexing and abstracting services, citations, indexes and databases, and current awareness methods to keep up to date. The fifth stage refers to “The ability to compare and evaluate information obtained from different sources”, it describes students should be aware about the bias and authority issues of resources and appropriate extraction of information matching the information need. The six stage entails about “The ability to organize, apply and communicate information to others in ways appropriate to the situation”, it signifies students to cite bibliographic references in academic work to assure legal use of information, construct a personal bibliographic system, apply information to the problem at hand, communicate

effectively using appropriate medium and understand issues of copyright and plagiarism. The last stage is “The ability to synthesize and build upon existing information, contributing to the creation of new knowledge”, it describes students should be create and present the final product of new knowledge.

The SCONUL model covers both library skill and IT skills. This model argues that information technology skill as a core skill being an information literate person. A number of studies revealed that the main problem of lack of information literacy skill is underutilization of Information and Communication Technology (ICT). (Adam and Wood 2006), in their study of utilization of ICTs in African Libraries, investigated that the problem of lack of information literacy is among other factors, underutilization ICT is one of them. Hence, to avoid as such barriers the seven pillars of information literacy model is a better model compared with others. In fact, this model is relevant for this study.

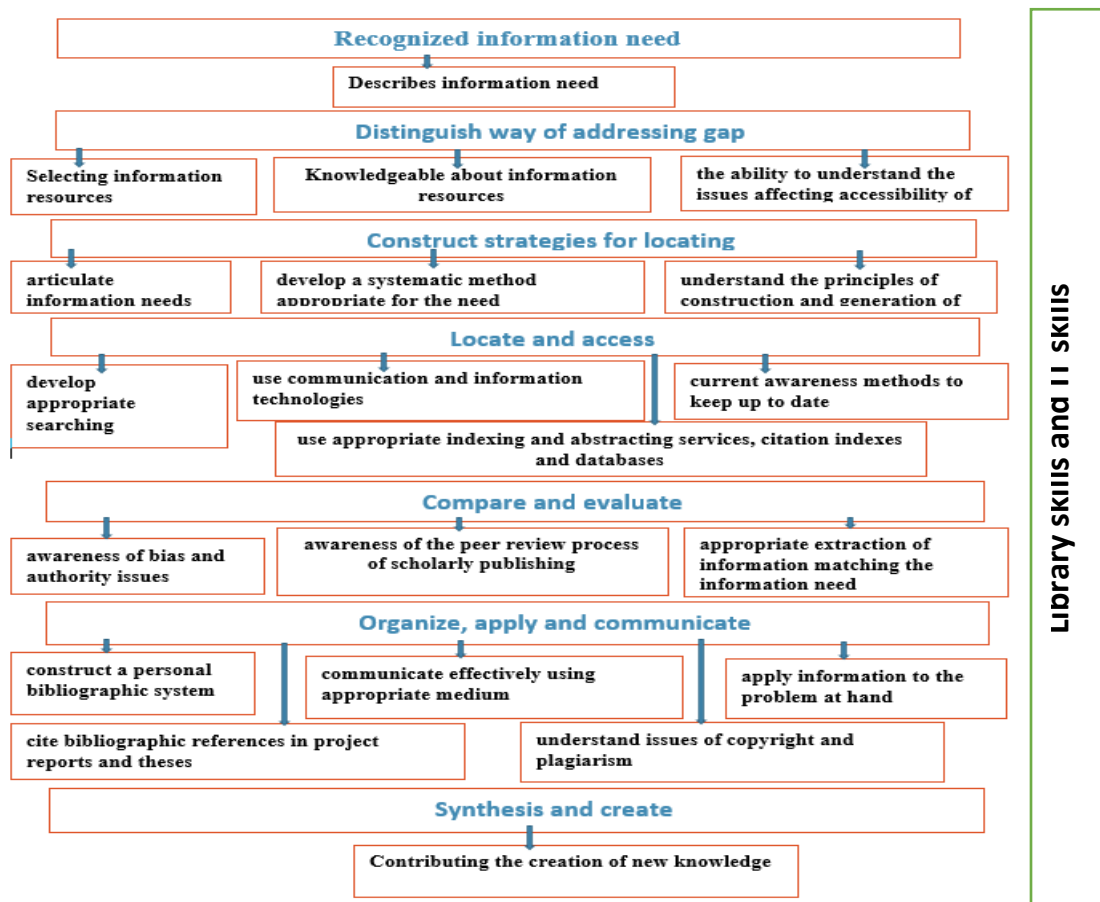


Figure 2. 3 SCONUL Seven Pillars Model for Information Literacy (SCONUL 1999)

2.12. Conceptual Model

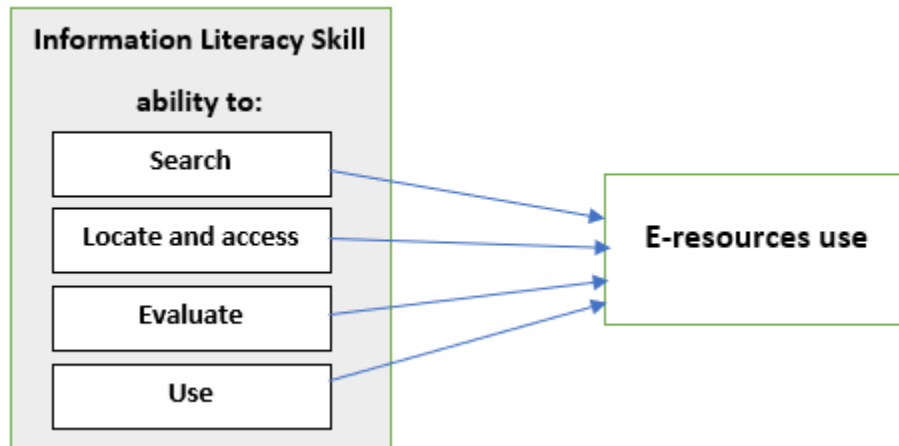


Figure 2. 4 Conceptual Model the Relationship Between Information Literacy Skill with E-resources Use

The above figures show that a conceptual model designed for this study. The model which indicated that how Information literacy skills can affect the dependent variables which are utilization of e-resources in the case of Ethiopian Civil Service University graduate students. The study considered as students who possessed information literacy skills ability (search, locate and accesses, evaluate and use skill) have an adequate opportunity to utilize electronic information resources for their academic work effectively and efficiently. While, students who have lack of information literacy skill become underutilization of e-resources. Hence, the utilization of electronic information resources depending on information literacy skills.

Information Literacy skills

- **Search skills:** To find the needed information from the sources, constructing effective search strategies using search terms or keywords, logical operators, synonyms and truncation.
- **Locate and access skills:** An ability to locate information resources using appropriate search strategies and information access tool such as search engines, OPAC, bibliographies and databases.
- **Evaluation skills:** an ability to determine the retrieved information its' authoritativeness, accuracy, objectivity/point of view/bias, coverage, currency and the information sources.
- **Use skills:** the ability to comprehend and use information effectively and efficiently to solve problems at hand without affecting the owner of the information resources.

2.12. Related Work

(Osman 2014) examined a survey study on **“Nursing Students’ Experience with Information Literacy Skill”**, according to Osman ILS is as essential as basic reading and writing. The study focused on the effect of Information literacy skill on utilization of e-database, factors influenced to use subscribed e-database and challenges encountered in learning information literacy skills. The main aim of the study is to support academic librarians and faculty members in redesigning and developing IL instructions that are compelling, students will also renew their interest in the ILS acquisition for academic and professional development. To conduct the study, the researcher adopted a survey design and to select respondent from the target population stratified sampling technique is applied. To answer the research questions, the researcher used a quantitative data collection instrument to collect data from the primary sources through a questionnaire. The design questionnaires are made up of four (4) sections consisting of 17 items. As well as, secondary data are collected from the secondary sources such as relevant articles and papers. In addition to this purposive sampling is adopting. The analysis of data and results are presented in charts and tables using frequency and percentage. The results of the study are demonstrated under four sub group the first one is ‘Usefulness of e-databases to academic and professional practice’; the result shows that 100% respondents representing the usefulness of subscribed e-databases. The second one is ‘Searching Skills and the Extent of Use of Subscribed E-Databases’; the finding shows that out of 20 respondents 19 of them have low and very low searching skill, and 1 respondent has high search skills so that, they don’t use subscribed e-databases. Therefore, the two variables which are searching skills of respondents and degree of use of subscribed e-databases have strong associations. The third one is ‘Factors That Influence the Use of Subscribed E-Databases’; the majority of the respondents representing 50% and 43% are ease and speed of access and good searching skills respectively influences the use of subscribed e-databases. The Fourth one is ‘Main Drawback of Learning ILS’; students’ attitude 37.5%, methodology of teaching 32% and academic loads 30% are represented by the respondent. Therefore, the researcher argues that all drawbacks are critical.

(Adeniran and Onuoha 2018) undertook a survey research design of correlation on the title **“Influence of Information Literacy Skills on Postgraduate Students’ Use of Electronic Resources in Private University Libraries in South-West, Nigeria”**. This study reveals that, the arrival of the Internet in the academic environment e-resources become indispensable due to its timeliness, search facilities, remote access and up datedness. The study argues that to be successful in the use of available e-resources postgraduate students need to acquire and practice the skills necessary to explore them. Therefore, for effective information search postgraduate students have needed a computer literacy skill. The researchers noted that, the underutilization of e-resources could be attributed lack of information literacy skill which

have limited the ability to effectively locate and make ethical use of needed information. The aim of this study has investigated the extent to which information literacy skills could influence e-resources utilization by postgraduate students in private universities in the South-West, Nigeria. To establish the use of e-resources by postgraduate students the researcher adopted the Big Six information skills model and draw the conceptual model; which is the use of e-resources is dependent on information literacy skills. The study adopted the multi stage sampling technique to select samples from four (4) faculties purposively and use the proportionate random sampling technique using 20% fraction is used to select the respondents from the total of 4212 populations 550 are selected. To collect the data, the researcher used a questionnaire and the collected data are analyzed using descriptive and inferential statistics. The results of the study organized into four themes the first one is, The Purpose for Which Postgraduate Students Utilize Electronic Resources; Under this theme, results indicated that from the respondents using the Internet to source materials and information, for research, using e-journals to augment class works and using e-journals for writing term papers were ranked higher. The second one is the frequency of electronic resource usage by postgraduate students; the Internet, OPAC, Online databases, e-journal and e-books are frequently utilized. The third one is the level of information literacy skills of the respondents; Based on the respondent's response the ability to initiate how and where to find needed information, ability to locate information, sources, ability to select the information that is most appropriate to needs, and ability to select search strategies by date, subject and language. While respondents least skilled to organize information and inability to identify different sources of information. The last theme is the analysis result indicates that there is a significant positive correlation between information literacy skills and e-resources use.

(Anandhalli 2018) Conducted a Survey study on **“Impact of Information Literacy Skills on the Academic Achievement of the Students: a case study of Anjuman degree college, vijayapura”**. **Gavsiddappa Anandhalli** noted that in 21st information is the life blood of a human being; therefore, for users' achievement Information literacy skill has a positive correlation. The study assesses students' ability to search, locate and retrieve information from various information sources and examine the influence of information literacy skill on students' academic performance using regression model. The study used survey design and to select respondents from the target population follow stratified random sampling technique. To collect the data structure questionnaire has been applied as a data collection instrument and the data is analyzed using statistical tools like Frequency, Percentage, t-test, ANOVAs and Regression Model. The study, conducted on respondents who are from Commerce, science and art college students. The researcher observed that students have different level of information literacy skill. The researcher found out that Science students have better information literacy skill compared with the other

colleges. Another major finding of the study, information literacy skill has a positive impact on students' academic achievement.

(Adeleke and Emeahara 2016) undertook a survey study on **“Relationship Between Information Literacy and Use of Electronic Information Resources by Postgraduate Students of the University of Ibadan”**. The main aim of the study to establish the existing relationship between information literacy skills on the level of usage of electronic information materials for academic work of postgraduate students. The study reveals that information literacy plays a crucial role to utilize information resources. Therefore, to induce information literacy skill for the users' information professional are required. To conduct the study, the researchers have used descriptive survey and to select respondents from the population, use random sampling technique as well as Convenience and purposive sampling techniques are adopted. Data used for this study are collected using a test and questionnaire. The data were analyzed using descriptive statistics such as percentages, mean, standard deviation, and correlation analysis is used. The study investigates that a number of computer skills are prerequisites to use electronic information resource. Therefore, for effective use of electronic resources, computer use and information literacy skills are essential. The study reveals that low level usage of electronic resource directly linked with lack of awareness about the availability and lack of search techniques skills. Results showed that there is a significant relationship between information literacy skills and use of electronic information resources at $\alpha = 0.05$ ($P = 0.034$).

(Akpovire et al. 2019) conducted a survey study on **“Role of Information Literacy Skills on Use of Information Resources by Medical Students in Lagos State”**. The main aim of this study is, creating an awareness for medical students on the need to have the information literacy skills to increase search sufficiency and effective use of information. The study adopted a survey research design and for data collection self-structure questionnaire is used. The data are analyzed using descriptive and inferential statistics. The finding of the study reveals that in the sampled universities the most available information resources for medical students are print newspapers, text-books and e-resources. The study shows medical students use information mostly for examination and test, get information for patients' diagnosis and writing projects. In this study, results show that information literacy skill and use of information sources by medical students have a significant relationship.

Table 2. 2 Summary of Related Works

NO	Title	Author (year)	Objective/purpose	Methods/tools/techniques	Key findings
1.	Nursing Students' Experience with Information Literacy Skill	Hawa Osman (2014)	The main objective of the study is, assess Students of school of Nursing and Midwifery (SONAM's) ILS and utilization of e databases of University of Health and Allied Science UHAS Library	♦ This study used a Survey design and quantitative approach. The sample is taken using stratified and purposive sampling technique. The primary data are collected through questionnaire and secondary data obtained from different articles and papers ♦ To analyze the data, the researcher used SPSS tool	The Major finding of the study is: - ♦ Searching skills and use of e-databases have directly related. ♦ The major factors that influence students to use subscribed e-databases are ease and speed of access and good searching skills ♦ The main drawback of learning ILS is students' attitude, methodology of teaching and academic loads
2.	Influence of Information Literacy Skills on Postgraduate Students' Use of Electronic Resources in Private University Libraries in South-West, Nigeria	Pauline Oghenekaro Adeniran, Uloma Doris Onuoha	The main objective of the study has investigated the extent and influence of information literacy skill to utilize e-	♦ To conduct the research, the researcher adopted a survey study. The questionnaire is used to collect data from the respondents. A sample is taken using both stratified (multistage sampling	♦ Information literacy skills and e-resources use have a positive correlation ♦ Respondents are skilled; the ability to initiate how and where

		(2018)	resources by a postgraduate student	technique) and purposive selection	to find the needed information, to locate information sources, to select the needed information and to select search strategies by date, subject and language. While respondents least skilled to organize information and inability to identify different sources of information.
3.	Impact of Information Literacy Skills on the Academic Achievement of the Students: a case study of Anjuman degree college, vijayapura	Gavsiddapa Anandhalli (2018)	Examine the influence of information literacy skill in the academic performance of the Student	◆ Survey method is used with a data collection tool questionnaire. Stratified and random sampling methods are followed in the selection of samples for the study.	◆ The level of Information literacy skill between science and art students is different. Which are science students have better skill compared with art students. ◆ Information literacy skill has a positive impact on students' academic achievement
4.	Relationship Between Information Literacy and Use of Electronic Information Resources by Postgraduate Students of the	Adeleke Dare Samuel and Emeahara Evelyn	Established the existing relationship between information literacy and usage of electronic	◆ The study used descriptive survey research design. To select sample population, the random	◆ To use electronic resources computer skills are prerequisites ◆ Low level usage of

	University of Ibadan	Nkechi (2016)	information materials for academic work.	sampling technique is adopted. And also, Convenience and purposive sampling techniques are used. The questionnaire is used to collect data from the respondents.	electronic resources has directly linked with lack of awareness about the availability and lack of search techniques skills ♦ Information literacy skills and use of electronic information resources have a significant relationship
5	Role of Information Literacy Skills on Use of Information Resources by Medical Students in Lagos State	Akpovire Eunice, et al (2019)	The main aim of the study is to create awareness for medical students the need of having information literacy competencies for effective and efficient use of information resources.	The study has adopted a survey design and to collect the data self-structure questionnaires are administrated. The data are analyzed through descriptive and inferential statistics.	♦ Information literacy skill and use of electronic information sources have a significant relationship by medical students.

2.12. Summary of Literature Review

In this chapter different related literature were reviewed to conduct the study. Various issues were discussed which includes the Information Literacy Model; many scholars were developed several models at different times to adopt information skill such as REACTS Model, the Big6 IL Model, Information Search process, Pathways to Knowledge and Seven Pillars of IL model. Need of Information Literacy; in the information rich world Information literacy used as a weapon for individuals to be an independent learner. The trends and practice of Information literacy in the context of different countries. And electronic information sources; It is very indispensable for the students due to the scalability of Information and communication technology and the arrival of the Internet into an educational institution. The majority of the literature reviewed were shown that, between Information literacy skill and electronic resource utilization have a positive significant relationship. Therefore, individuals in this case students, effectively and efficiently to utilize electronic resources they should be skilled in Information Literacy competency.

Chapter Three

Research Design and Methodology

3.1. Introduction

The main purpose of this chapter is described how the research process was conducted by the researcher considering the research questions to the development of finding. The chapter includes and focuses on the research method, target population, sampling technique, sample size determination, data collection instrument, pilot study, validity and reliability of the instrument, data collection procedure, data analysis and ethical consideration.

Research Methodology is described as a plan, strategy or a way in which data is collected for research work and solve research problems systematically and scientifically. It is a collection of methods and procedures used to conduct the research. In research methodology, there are two approaches quantitative and qualitative. According to (Kumar 2018) qualitative research is mostly used for descriptive statements, to find answers to the research questions, whereas in quantitative research these answers are usually find on one of the measurement scales (nominal, ordinal, interval or ratio). In the study the researcher was applied quantitative approaches to obtain data about the effect of Information literacy skill to search information strategically, accesses and locate the needed information effectively and efficiently from various sources, evaluate the information its relevance and credibility, and to use information an ethical manner by graduate students.

3.2. Research Design

Research design is a logical step in which the researcher who undertaken in the study to answer the design research questions (Brink 2006). It forms a blueprint to determine the methodology used by the researchers to obtain sources of information such as, subject, elements, and unites of analysis and to interpret the result. To conduct the research, the researcher used a descriptive survey method. It is appropriate to generalize a large group from which subgroups have been selected (Connaway and Powell 2010). It allows to determine students' perception about information searching, accessing and locating, evaluating and using skills of electronic information resources.

Related studies that have used a survey research design related with "Information Literacy Skill" are (Osman 2017) titled "Nursing Students' Experience with Information Literacy Skill". Similarly (Adeniran and Onuoha 2018) used survey study to study "Influence of Information Literacy Skills on Postgraduate Students' Use of Electronic Resources in Private University Libraries in South-West, Nigeria". Moreover, (Ademilua 2019) uses a survey method on the titled "Information Literacy Skills among Undergraduates of Adeyemi College of Education, Ondo, Nigeria".

3.3. Population of the Study

The target population for the study was Ethiopian Civil Service University four hundred (400) regular graduate students, who are admitted for the 2019/2020 academic year. The university has three colleges which are College of Urban Development and Engineering, College of Finance, Management and development, and College of Leadership and Government. The researcher was used the CUDE and CFMAD college graduate students purposively the reason is mentioned in the scope of the study, and to collect the entire data it is an easy to get regular graduate students. The entire population of the study is presented below in a table; this data is provided by Ethiopian Civil Service University registrar office.

Table 3. 1 Population Distribution

College	Population	
	Department	Number of Student
CUDE College	Urban Housing Development and management	21
	Urban Land Development and management	24
	Urban Management	24
	Urban property valuation asset management	17
	Urban Environment and climate change	27
	Urban Infrastructure provision and management	34
	Urban planning and development	24
	Transport management	30
	Total	201
CFMAD college	Development management	30
	Accounting and finance	27
	Public financial management	22
	Public procurement and asset management	18
	Development economics	31
	Public management	26
	Social protection management	20
	Custom Administration	25
	Total	199
Total population		400

3.4. Sampling Technique

The study was used probability sampling in particular stratified sampling techniques because the target population can be divided into two groups which are CUDE and CFMAD colleges. Stratified sampling involves systematically and strategically to select participants from each group or college and it helps for the researcher when comparing the behavior or attitude of participate from different groups (Gay, Mills, and Airasian 2012). This technique is very important for the researcher to compare and determine the level of information literacy skill among the natural science (CUDE) and social science (CFMAD) students. To select samples from the defined groups the researcher applied proportional stratified sampling. And also, cascading the proportion to get a new sample in the departments (subgroups) which are under the colleges or groups this helps to determine equal-sized sample and avoiding sampling error. To select the respondents from each zone the researcher was employed random sampling using a lottery method. In fact, the population of the study is relatively homogeneous within a given department.

3.4.1. Sample Size Determination

To determine the sample size, the researcher applied (Gay, Mills, and Airasian 2012) the recommended rules which is, if the population size is around 500, 50% of the population should be sampled.

The study was carried out the selected Colleges which are CUDE and CFMAD in Ethiopian Civil Services University. The total population of the study is four hundred (400) graduate students who are from CUDE and CFMAD College. To determine the sample size the researcher apply (Gay, Mills, and Airasian 2012) general rules to each college independently. Based on the population, sampling frame of 50% of the population was sampled which is for CUDE one hundred two (102) students and CFMAD one hundred one students (101) approximately two hundred three students (203) were selected. This idea by the researcher is influenced (Babbie 2007)states that probability samples of less than 100 are not likely to be very representative of the population. Thereafter, the researcher cascading this sample to each department based on its categories. Finally, the random sampling technique was employed to select each respondent from quota allotted to each department. This is indicated below in table 3.2.

Table 3. 2 Selected Population for the Study

College	Department	Population	Sample
CUDE College	Urban Housing Development and management	21	11
	Urban Land Development and management	24	12
	Urban Management	24	12
	Urban property valuation asset management	17	9

	Urban Environment and climate change	27	14
	Urban Infrastructure provision and management	34	17
	Urban planning and development	24	12
	Transport management	30	15
		201	102
CFMAD college	Development management	30	15
	Accounting and finance	27	14
	Public financial management	22	11
	Public procurement and asset management	18	9
	Development economics	31	16
	Public management	26	13
	Social protection management	20	10
	Custom Administration	25	13
		199	101
	Total	400	203

3.6. Data Collection Instruments

In this study, the researcher used a quantitative research approach. In this approach survey questionnaire was used as a primary data collection method and to collect the data from the selected respondents across-sectional data collection method was applied.

3.6.1. Questionnaire

In a survey study, a questionnaire is the major data collection instrument. The questionnaire is well structured instrument with a series questions to obtain statistically important information about a given topic from the respondents. In survey study structured questionnaires are the most essential, simply asked the respondent to select an answer from among a list provided by the researcher. It is very popular in survey research because they provide a greater uniformity of responses and more easily processed (Gay, Mills, and Airasian 2012). Therefore, in the study, the researcher applied structured questionnaires because many respondents won't take the time to respond to free-response items. In addition to this it allows to gather large amounts of data and to analyze a large population from small samples. As well as it is an inexpensive way to collect data and the questionnaire data is easily expressed in numerical form.

To investigate the effect of Information literacy skill on the utilize electronic resources different questionnaires were developed and adopted from different studies, which are accordance with the research objective. The design questionnaires were targeted the respondents about the effect of

information literacy skill to search information strategically, locate and accesses information from various sources, evaluate the information its relevance and credibility, and use information in a responsible manner.

Table 3. 3 Sources of Questionnaires

No	Questionnaire	Sources
1.	Information literacy skills	Effects of Information Literacy Skills on the Use of E-Library Resources among Students of the University of Ilorin, Kwara State, Nigeria
		Information literacy in Oman's higher education: A descriptive inferential approach
		Assessment of Information Literacy Skills among Science Students of Andhra University
		Influence of Information Literacy Skills on Postgraduate Students' Use of Electronic Resources in Private University Libraries in South-West, Nigeria
2.	Information literacy skills acquisition	Information Literacy Skills and Availability of Information Resources as Factors Influencing Research Productivity of Academic Staff of Federal Universities in Nigeria

The questionnaire consisted of four sections, the first section required respondents' profile such as student sex, age and college. The second section comprised the level of students' Information literacy skill, information literacy skills ability (information searching, locating and accessing, evaluating and using skills) and use of electronic information resources. This section has at all 28 questions and they are presented in the Likert scale format. The third section required students' perception about the components of Information literacy such as tool literacy, computer literacy, network literacy and digital literacy. This section constitutes 11 equations. The fourth and the last one is asked students' where to get information literacy skill training and it comprises 4 questions.

3.7. Validity and Reliability of the Instrument

3.7.1 Validity

Measuring the data collection instrument is very important to obtain pertinent data. The measured instrument must be both valid and reliable. Validity refers to the degree to which a test measures what it is supposed to measure and, consequently, permits appropriate interpretation of scores. When we test the design data collection instrument or tool for a purpose again and again it must achieve the purpose. There are different types of validity to define the validity, namely Content validity, Criterion-related validity, Concurrent Validity and Predictive validity (Gay, Mills, and Airasian 2012). Content validity ensures that the instrument adequately covers all the content that it should with respect to the variable. To ensure the content validity of the data collection instrument, in which the design questionnaire was given to the research advisor to criticize. Thereafter, according to the given comment correct the instrument appropriately and administrated it to collect the desired data.

3.7.2 Reliability

Reliability means the consistency of a measuring instrument to ensure that the scores of an instrument are stable and consistent. The more reliable a test is, the more confidence we can have that the scores obtained from the test are essentially the same scores that would be obtained if the test were re-administered to the same test takers at another time or by a different person (Gay, Mills, and Airasian 2012). In this study to ensure the reliability of the instrument a pre-test is employed.

3.7.2.1 Pilot testing

In this study, pilot testing was conducted before the main data collection process takes place. A pilot study was carried out at Ethiopian Civil Service University 2019/2020 entry regular graduate students. In the study at the first stage of piloting, the researcher asked participants to give extensively comment on all items in the questionnaire. It is very important getting a constructive feedback from the respondents. For pilot testing 25 questionnaires was administrated to improve its' content and out of these 22 questionnaires were returned back. The Cronbach alpha result of the items was 0.993. This is within the acceptable range 0.72 to 1.00 recommended by (Yin 2013), (see below table 3.4) to illustrate the Cronbach's Alpha reliability of administrated instruments.

Table 3. 4 Case processing Summary

		N	%
Cases	Valid	22	100.0

	Excluded ^a	0	.0
	Total	22	100.0

Reliability Statistics	
Cronbach's Alpha	N of Items
.993	35

- a. Listwise deletion based on all variable in the procedure

3.8. Data Collection Procedures

To administrate the research questionnaire in Ethiopian Civil Service University, first the researcher did self-introduce for CUDE and CFMAD college deans and department head respectively. After then, discussed with them and explained the purpose of the study to obtained their permission to administer the research questionnaire. After that, the researcher contacted with each department class representative and explain to them the purpose of this research and requesting class representative to coordinate the participants to complete the research questionnaire at the end of the class session.

Second, based on the determined sample size, select respondents from the entire population randomly after that the questionnaire was administrated at the Ethiopian Civil Service University graduate students who are enrolled in 2019/2020 academic year. Normally, the data collection was started on March 10th, 2020 up to 24th, 2020 which was at the beginning of second semester class. The researcher was personally participated in distributed copies of questionnaires and collected them back to afterwards. Copies of the questionnaire was administrated personally to each department respondents. At all, two hundred three copies of questionnaires (203) were administrated. However, at this time the researcher was encountered some impediment during the administration of the research instrument. For instance, to reach the respondents the researcher asked them to wait after the lecture hours finished to full fill the questionnaire, through the help of class coordinator.

3.9. Data Analysis

The data analyzed using the Statistical Package for Social Sciences (SPSS), a computer aided software. Generally, this tool is good to handle social science data and it contains most of statistical formula and procedures. To provide safeguards for the collected data against from error, the data were cleaned which includes check completeness, comprehensibility, consistency and reliability. Then after, coding the data; convert the informants' responses into numerical code. The results are present in descriptive statistics such as frequency, percentage, mean and standard deviation and inferential statistics, which include independent sample 't' test, correlation, and Multiple regression. To demonstrate the respondent's response, the data was presented in the form of tables and graphs.

3.10. Ethical Considerations

The research upheld all ethical issues expected in the design, conduct, analysis and dissemination in the entire study. Participants were informed the purpose of the study seek their consent prior to their participation. Accurate standards were adhered to in the collection, analysis and interpretation of the study findings.

Chapter Four

Data Analysis and Presentation

4.1. Introduction

In this chapter, the collected data were analyzed based on the research questions and hypothesis. In the study a total number of two hundred three questionnaires (203) were administrated to the respondents and a total number of one hundred sixty and five (165) questionnaires were returned and used. Hence, the response rate of the respondents was 81.3%. The responses of the students were presented and shown in the following tables below. The table represents the number of questionnaires which is returned and unreturned.

The number of questionnaires which are distributed from which the returned and unreturned questionnaires given in the table number 4.1.

Table 4. 1 Questionnaire Distributed Returned and Unreturned

Distributed	Returned		Unreturned	
	Number	Percent (%)	Number	Percent (%)
203	165	81.3	38	18.7

The above table shows that eighty and one point three (81.3%) questionnaires were returned with answers and eighteen point seven (18.7%) questionnaires were not returned among two hundred three (203) distributed questionnaires.

4.2. Demographic Profile of Respondents and Result of Analysis

This section presented demographic distribution of the respondents, where the researcher used in this study. Demographic data are the basic information about respondents. Demographic data obtained from the respondents includes sex, age and student's college.

4.2.1. Gender of Respondents

Respondents were asked to indicate their gender. The results are presented below in table 4.2.

Table 4. 2 Gender of Respondents' Distribution

Gender	Number respondents	Percentage
Male	128	77.6

Female	37	22.4
Total	165	100

Figure 4.1 shows the gender distribution of the study population, it is observed that the majority of the study population (77.6%) belongs to male category. While, 22.4 % of the respondents belongs to female category. It can be concluded that, the majority of the study sample belongs to male category.

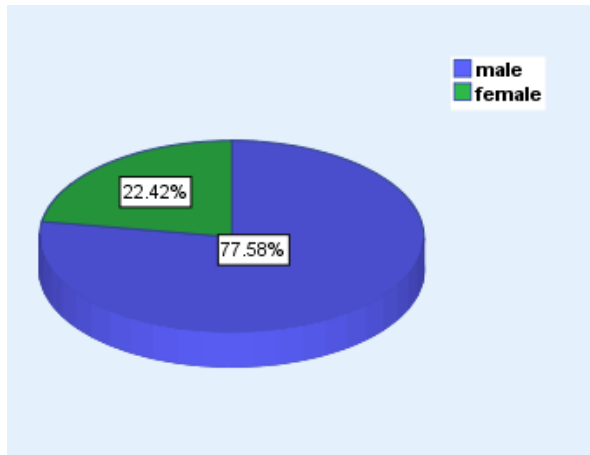


Figure4.1 Respondents' gender distribution

4.2.2. Age of Respondents

Respondents were asked to indicate their age group. Results are presented in table 4.3 and figure 4.2 below.

Table 4. 3 Age of Respondents' Distribution

Age	No of Respondents	Percent
24 or below	6	3.6
25-30	67	40.6
31-36	48	29.1
37-42	34	20.6
43 or above	10	6.1

Table 4.3 reveals that gender distribution of the respondents. In this study among the overall 165 respondents, a majority of 67 (40.6%) respondents belong to 25-30 Years of age group and it is followed

by 48 (29.1%) respondents were between 31 to 36 years age group, 34 (20.6%) of those were range 37 to 42 years of age, 43 or above and 24 or below had 6.1% and 3.6% respectively. In this study the age categories suggest that most of the respondents are younger age group. Figure 4.2 below further presents the result from the table in a pie chart.

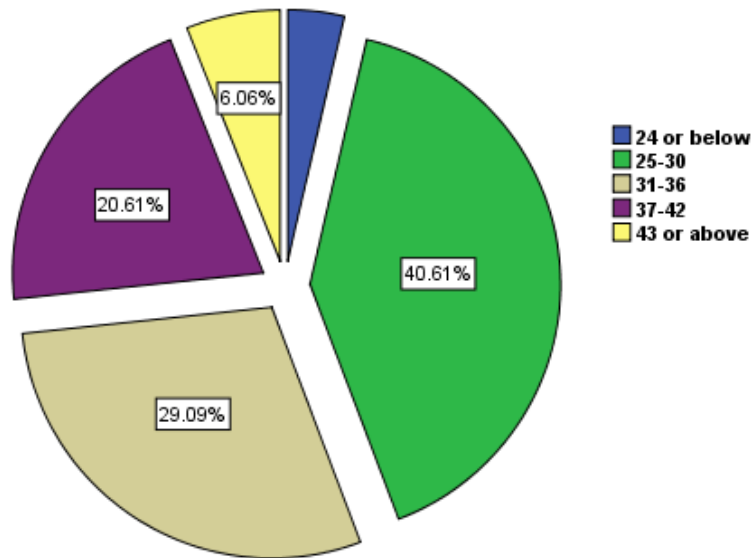


Figure 4.2 Respondents Age Group

4.2.3. College of Respondents

Respondents were asked to indicate their college and results are revealed below in table 4.4.

Table 4. 4 Respondents' Colleges Distribution

Colleges	No of Respondents	Percent
CUDE	76	46.1
CFMAD	89	53.9
Total	165	100

The above table indicates the colleges distribution of respondents. In this study, the majorities of 89 (53.9%) of respondents are under CFMAD colleges and 76 (46.1%) of respondents are categorized under CUDE college. Hence, CFMAD participants are more in the present study than CUDE college participants.

4.3. Analysis of Research Questions and Results

This section offers to answers the four-research question in the study.

4.3.1. Research Question 1: What Information literacy skills do Ethiopian Civil Service University graduate students possess and at what level of mastery?

In order to answer to the first research question, which is what Information literacy skill of Ethiopian Civil Service University graduate students possess and their level of mastery were measured by using 5 variables with 5 scale items (1=very low, 2=low, 3=neutral, 4=high and 5=very high). To analyze the collected data, descriptive statistics were applied and to determine their level of information literacy skill results are presented below in the two tables independently which are CUDE and CFMAD tables. Those tables are providing data on the two college respondents about their own level of information literacy skill. This helps to the researcher to compare and determine the extent of information literacy skills between the natural science (CUDE) and social science (CFMAD) graduate students in the Ethiopian Civil Service University.

NO	Variables	Responses										Mean
		Very Low		Low		Neutral		High		Very High		
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
1	Formulating questions based on information needs	5	6.6	46	60.5	7	9.2	17	22.4	1	1.3	2.51
2	Developing successful search strategies	11	14.5	43	56.6	6	7.9	16	21.1	0	0	2.35
3	Identifying and Accessing potential sources of information	6	7.9	46	60.5	7	9.2	13	17.1	4	5.3	2.51
4	Evaluating information and its sources	7	9.2	47	61.8	10	13.2	12	15.8	0	0	2.35
5	Using information in critical thinking and problem solving	8	10.5	41	53.9	10	13.2	15	19.7	2	2.6	2.50
												X=2.44

Table 4. 5 CUDE Students' Level of Information Literacy Skill

NO	Variables	Responses										
		Very Low		Low		Neutral		High		Very High		Mean
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
1	Formulating questions based on information needs	17	19.1	48	53.9	6	6.7	17	19.1	1	1.1	2.29
2	Developing successful search strategies	13	14.6	55	61.8	7	7.9	11	12.4	3	3.4	2.28
3	Identifying and Accessing potential sources of information	15	16.9	44	49.4	12	13.5	15	16.9	3	3.4	2.40
4	Evaluating information and its sources	6	6.7	52	58.4	7	7.9	20	22.5	4	4.5	2.59
5	Using information in critical thinking and problem solving	14	15.7	44	49.4	8	9	21	23.6	2	2.2	2.47
												X=2.40

Table 4. 6 CFMAD Students' Level of Information Literacy Skill

The above two tables were established to measure the level of information literacy skill between the two college students. The first question was required respondents on “formulating questions based on information needs”. Information is required for problem solving in the workplace, business, health, education or in any way of life, due to this, to full fill or find the needed information, individuals should be able to formulate questions based their information need is mandatory. In the above tables, results indicate that, the mean score value of CUDE college students were ($M=2.51$) which is above the midpoint value. In contrast, in CFMAD college students were ($M=2.29$) which is below the midpoint value. The second question was asked, respondents about “developing successful search strategies”. It is very essential to facilitate the location of the needed information by constructing appropriate search strategies. However, it was observed that from the result, the mean value of CUDE and CFMAD college respondents were ($M=2.35$) and ($M=2.28$) respectively. Therefore, this indicates that both college students were posed low skill to apply successful search strategies. The third question was requested participants to rate their “identifying and accessing potential sources of information”. The results were indicated that on the table, the average mean score value of the CUDE colleges respondents were above the midpoint value ($M=2.51$), while the CFMAD college respondents were ($M=2.40$). The fourth question was acquired respondents to indicate their ability to “evaluating information and its sources”. The main purpose of this question was asked, to examine how respondents were found quality information for their need. The results were as indicated that in the above tables, the mean value of CUDE college students were ($M=2.35$), which is lower than the half value of mean score. While, in CFMAD college students were ($M=2.59$) higher than the midpoint value. The last question was asked, respondents for “Using information in critical thinking and problem solving” finding show that, the mean value of CUDE college respondents was equivalent to the midpoint value ($M=2.50$). Whereas, CFMAD college respondents were scored ($M=2.47$), this was indicated that under the mid score value.

4.3.2. Research Question 2: What type of ILS problems are, Ethiopian Civil Service University graduate students are encounter when attempting to utilize e-resources?

To ascertain what problems were encountered by graduate students to utilize electronic information resources, various information literacy skills were made up for them with five-point Likert’s scale. To answer this research question, the researcher was designed four main categories questionnaire and for each category different number of sub questionnaires were developed.

4.3.2.1. Information searching ability

Information searching ability is a dynamic skill to find the needed information systematically and strategically from the available information source. Basically, an information searching process involves

applying through different searching principles and techniques. To measure the respondents' ability regarding to their information search ability the researcher was asked four questions.

Table 4. 7 Information Search Ability Possessed by Students

NO	Variables	Responses					
		SD	DA	NS	A	SA	Mean
		Freq & %	Freq & %	Freq & %	Freq & %	Freq & %	
1	I have the ability to identify the most relevant sources of information	23 13.9%	89 53.9%	10 6.1%	39 23.6%	4 2.4%	2.46
2	I can prepare a search plan using diverse keywords, phrases, or synonyms	24 14.5%	84 50.9%	14 8.5%	40 24.2%	3 1.8%	2.47
3	I can introduce search strategies using Boolean logic (and, or, not, *..., "...", etc)	22 13.3%	90 54.5%	20 12.1%	30 18.2%	3 1.8%	2.40
4	I can criticize searching process and its products	21 12.7%	86 52.1%	20 12.1%	37 22.4%	1 0.6%	2.46
							X=2.44

The first question asked respondents to give their responses for their ability to identify the most relevant sources of information. The main objective of this question was asked by the researcher, potentially how participants can find and identify the most relevant sources of information for their needs. And also, to ensure when the students found relevant source information how they evaluated the relevance of the sources using various criteria such as number of times the item was cited, paper outline and content coverage. Results presented in the above table, the majority of 89 (53.9%) of respondents were disagreed. While, 39 (23.6%) respondents agreed, 23 (13.9%) of and 10 (6.1%) of were strongly disagreed and not sure respectively and the rest of 4 (2.4%) were strongly agreed. On the other hand, the mean scored result was (M=2.46) which was below the midpoint value.

The second question was requested participants to answer, can they prepare a search plan using diverse keywords, phrases, or synonyms. The results were indicated that in the above table, most respondents affirmed 84 (50.9%) of disagreed this shows that they can't prepare a search plan. However, 40 (24.2%)

of respondents were agreed, 24 (14.5%) of were strongly disagreed, 14 (8.5%) of were not sure and 3 (1.8%) of were strongly agreed. The mean score value of the result was below the half value, (M=2.47).

The third question was, required respondents to indicate can they introduce search strategies using Boolean logic. The intention of this question was to demonstrate whether the participants were applied different logical operators during searching time, which includes that the AND operator, The OR operator and NOT operators. The function of the AND operator is to combine search terms in such a way that all of the terms combined by AND in the query must appear in the document for it to be retrieved. The OR operator combines terms in such a way that any of the terms combined by OR can be present in the document for it to be retrieved. The third Boolean operator is NOT, it is used to exclude certain search terms from your query (Bothma 2008). Results showed that, the most frequent choice was disagreed, which constituted 90 (54.5%) which indicated that majorities of the respondents were unable to introduce search strategies using Boolean operators. Whereas, 30 (18%) of respondents were agreed, 22 (13.3%) of participants were strongly disagreed, 20 (12.1%) and 3 (1.8%) were not sure and strongly agreed respectively. From the study, the average mean score value was (M=2.40) which was below the midpoint score.

The fourth question asked respondents to indicate their affirmative for criticizing the searching process and its products. To get a better information based on your information need considering the searching process and products are an inevitable issue to ensure the reliability of results using a database, platform, search engine or other search tool. The finding presented in the table; the highest response rate was identified which was disagreed 86 (52.1%) this indicated that, students didn't criticize the searching process as well as its' product. The next response rate was agreed 37 (22.4%), 21 (12.7%) of strongly disagreed, 20 (12.1%) of not sure, the least response rate was strongly agreed 1 (0.6%) with the average mean score (M=2.46).

4.3.2.2. Information locating and accessing ability

Information is found in many places. To find and retrieve information from sources, individuals should develop appropriate search techniques, use information and communication technology, use appropriate indexing, abstracting services, citation database and current information methods are essential. To determine the students' ability to locate and access information from sources the researcher, designed four questions.

Table 4. 8 Information Locate and Access Ability Skill Possessed by Students

NO	Variables	Responses					
		SD	DA	NS	A	SA	Mean
		Freq & %	Freq & %	Freq & %	Freq & %	Freq & %	
1	I can locate information sources using internet search engines	25 15.2%	82 49.7%	15 9.1%	40 24.2%	3 1.8%	2.47
2	I can locate information sources using web based OPAC	24 14.5%	83 50.3%	21 12.7%	36 21.8%	1 0.6%	2.43
3	I can locate information sources using e-journals, e-books, or full-text databases	26 15.8%	75 45.5%	22 13.3%	39 23.6%	3 1.8%	2.50
4	I can locate information sources through examining the cited bibliography	27 16.4%	78 47.3%	19 11.5%	38 23.0	3 1.8%	2.46
							X=2.46

Under this category, the first question was requested respondents to felt about search engines. The main aim was using a Search engine how individuals search the database and retrieves documents based on a matched query. The results revealed that, the majority of them 82 (49.7%) of were disagreed, which means that most of them were not used to locate information using search engines. 40 (24.2%) of them agreed, 25 (15.2%) of strongly agreed, 15 (9.1%) of and 3 (1.8%) of were not sure and strongly agreed respectively with the mean score value (M=2.47). The second question asked participants for web based OPAC. The purpose of this question was with the help of Web based Online public access catalogue platform how individuals can access and locate bibliographic information of any entities which is available in the library which includes books, journals, computer files, graphics, maps, etc. Results indicated that in the above table, respondents have told the highest response rate was disagreed 83 (50.3%) almost half of the respondents cannot use the OPAC. The second highest response rate was agreed 36 (21.8%), the third and fourth were strongly disagreed 24 (14.5%) and not sure 21 (12.7%) and

the least response rate was strongly agreed. The average mean score was (M=2.43) below the average mean value. The third question was required participants, can they locate information using e-journals, e-books, or full-text databases. Finding showed that, the most frequent choice was disagreed 75 (45.5%), 39 (23.6%) of individuals were agreed, 26 (15.8%) of them were strongly disagreed, 22 (13.3%) of were not sure and the rest of were strongly disagreed 3 (1.8%). The average mean score value was (M=2.50). In this category the last question was requested, students about citing bibliography. This question was very important to know how students successfully located other materials using cited references which is found in particular sources. However, majorities of the respondents were 78 (47.5%) of disagreed all most majorities of the respondents were not carried out citated bibliography to locate other materials. In contrast, 38 (23%) of them were agreed, 27 (16.4%) of were strongly disagreed, 19 (11.5%) and 3 (1.8%) of were not sure and strongly agreed respectively. The average mean score value was scored (M=2.46) which under the midpoint value.

4.3.2.3. Information evaluating ability

The idea of this question asked respondents to indicate their information evaluation ability; firstly, to establish whether the students have the capability to evaluate information sources. Because all information sources are not essentially useful or relevant for your information need. Secondly, to ascertain students can determine the authoritativeness, correctness, timeliness and reliability of the information resources. Thirdly, to find out students can compare and evaluate critically whether the information collected is credible and relevant. Fourthly, to establish their ability to identify different sources of information which includes an online database, thesis and dissertation sits, book sits, journal sits, etc.

Table 4. 9 Information Evaluation Ability Skill Possessed by Students

NO	Variables	Responses					
		SD	DA	NS	A	SA	Mean
		Freq & %	Freq & %	Freq & %	Freq & %	Freq & %	
1	I have the capability to evaluate information sources	25 15.2%	82 49.7	16 9.7%	40 24.2%	2 1.2%	2.46
2	I can determine the authoritativeness, correctness, timeliness and reliability of the	23 13.9%	84 50.9%	20 12.1%	35 21.2%	3 1.8%	2.46

	information resources						
3	I can compare and evaluate critically whether the information collected is credible and relevant	21 12.7%	86 52.1%	19 11.5%	35 21.2%	4 2.4%	2.48
4	I have the ability to identify different sources of information	16 9.7%	77 46.7%	18 10.9%	48 29.1%	6 3.6%	2.52
							X=2.48

Finding indicated that in the above table, majorities of 82 (49.7%) of respondents were disagreed that their capability to evaluate Information sources. While, 40 (24.2%) agreed, 25 (15.2%) strongly disagreed, 16 (9.7%) not sure and 2(1.2%) were strongly agreed. Similarly, 84 (50.9%) of the participants were told disagreed, while 35 (21.2%) of were agreed they can determine the authoritativeness, correctness, timeliness and reliability of the information resources, 23 (13.9%) of them were strongly disagreed, 20 (12.1%) of not sure and 3 (1.8%) of were strongly agreed. Also, 86 (52.1%) of respondents were affirmed disagreed, which implies that most them cannot compare and evaluate the credibility and relevance of the collected information. On the other hand, 35 (21.2%) of respondents were agreed, 21 (12.7%) of them were strongly disagreed, 19 (11.5%) of were not sure and the rest of them were strongly agreed 4 (2.4%).

4.3.2.4. Information use ability in an ethical manner

The information is used for different purpose, such as for decision making, entertainment, general information, and problem solving. Therefore, the main reason was requested participants to answer this question to demonstrate how far individuals were able to use information in a legal and responsible way to create and distribute information in an ethical manner without affect the right of the owner of the work. Under this question, respondents were asked to indicate their abilities to sort information sources and select relevant sources of information, use of text-citation and write the cited bibliography information in an appropriate way. Results are presented below in table 4.10.

Table 4. 10 Information Use Ability Skill Possessed by Students

NO	Variables	Responses					
		SD	DA	NS	A	SA	Mean
		Freq & %	Freq & %	Freq & %	Freq & %	Freq & %	

1	I have the ability to sort information sources and select the most relevant	26 15.8%	80 48.5%	16 9.7%	40 24.2%	3 1.8%	2.47
2	I can use in-text citation in an appropriate way	18 10.9%	90 54.5%	19 11.5%	35 21.2%	3 1.8%	2.48
3	I can write the cited bibliography in an appropriate way	17 10.5%	91 56.2%	21 13.0%	32 19.8%	1 0.6%	2.43
							X=2.45

Results showed in the above table, 80 (48.5%) of respondents were disagreed their own ability to sort information sources and select the most relevant, 40 (24.2%) who agreed, while 26 (15.8%) strongly disagreed. However, 16 (9.7%) and 3 (1.8%) of them were not sure and strongly agreed. The average mean score was (M=2.47). The second question asked respondents for appropriate use of in-text citation. It is very indispensable to ensure the participants' awareness about plagiarism, acknowledging the owner of work or a specific information sources and academic integrity. Results indicated that majorities of respondents 90 (54.5%) were disagreed to use in-text citation in an appropriate way. While, 35 (21.2%) of were agreed, but 19 (11.5%) of were not sure, 18 (10.9%) of them strongly disagreed and the least response rate was strongly agreed 1 (0.6%). The mean score value was (M=2.48). The last question was requested to felt about writing the cited bibliography in an appropriate way. Basically, this question was very useful to assess whether or not students were put reference lists in alphabetical order and place on their assignments, project works or reports at the end the document. However, results revealed that majorities of participants were affirmed 91 (56.2%) disagreed, whereas 32 (19.8%) of them were agreed, 21 (13.0%) not sure, 17 (10.5%) of strongly disagreed and the rest of them were strongly agreed.

4.3.2.1. Frequency usage of electronic Information Resources

The study sought to investigate whether Ethiopian Civil Service University graduate students were potentially accessed electronic information resources for their academic purposes or not. Results are presented below in table 4.11.

Table 4. 11 Frequency of Electronic Information Resources Usage

NO	Electronic information resources	Response					Mean
		Always	Often	Sometimes	Rarely	Never	

1	E-journals	44(26.7%)	37(22.4%)	41 (24.8%)	43(26.10%)	0(0%)	3.49
2	E-books	21(12.7%)	30(18.2%)	41(24.8%)	56(33.9%)	17(10.3%)	2.84
3	Institutional repository	16(9.7%)	21(12.7%)	26(15.8%)	34(20.6%)	68(41.2%)	2.32
4	E-references	19(11.5%)	25(15.2%)	28(17.0%)	39(23.6%)	54(32.7%)	2.36
5	Online Database	17(10.3%)	24(14.5%)	27(16.4%)	42(25.5%)	55(33.3%)	2.33
6	Online Catalogue	5(3.0%)	13(7.9%)	31(18.8%)	27(16.4%)	89(53.9%)	1.99
7	Encyclopedia	10(6.1%)	21(12.7%)	35(21.2%)	46(27.9%)	53(32.1%)	2.28
8	E-data archives	0(0%)	5(3.0%)	41(24.8%)	38(23.0%)	81(49.1%)	1.84
							X=2.43

To know the frequency use of electronic information resources, the researcher asked respondents, to indicate how frequently used electronic information resources. The results were indicated that most of the respondents 44 (26.7%) always used E-journal, while 43 (26.10%) of indicated they used rarely, 41 (24.8%) of them were used sometimes and 37 (22.4%) of them were used rarely. However, none of the respondents were indicated, they never used. With E-book, most of the respondents 56 (33.9%) were specified they used rarely, 41 (24.8%) have said they used sometimes, 30 (18.2%) of them used often and 21 (12.7%) of were used always. Whereas, the remaining 17 (10.3%) of indicated they never used. On the other hand, in Institutional repository, results showed that 69 (41.2%) of the respondents were used never, while 30 (20.6%) of used rarely, 26 (15.8%) and 21 (12.7%) of the respondents were used sometimes and often respectively. Some of the respondents 16 (9.7%) were used always. Similarly, 54 (32.7%) of the respondents were used E-references never, 39 (23.6%) of used rarely, 28 (17.0%) of used sometimes, 25 (15.2%) of used often and the rest of them were 19 (11.5%) used always. Fifty-five (33.3%) of the respondents affirmed they used online-database never, 42 (25.5%) of used it rarely, 27 (16.4%) of used sometimes and 24 (14.5%) of used often. while 17 (10.3%) of them were used always. Results showed that online catalogue were used never with 89 (53.9%) affirmative, 31 (18.8%) of used sometimes, 27 (16.4%) of used rarely and 13 (7.9%) of used often. However, 5 (3%) of were not used at all. For the use of encyclopedia, 53 (32.1%) of the respondents decide they used never, while 46 (27.9%) of used rarely, 35 (21.2%) of used sometimes, 21 (12.7%) of used often and the rest of them were 10 (6.1%) used always. Similarly, 81 (49.1%) of the participants that they never used e-data archive, 38 (23.0%) of them

were used rarely, 41 (24.8%) of used sometimes and 5 (3%) of used often. However, at all no one was used always e-data archive.

4.3.3. Research Question 3: Which components of Information literacy have Ethiopian Civil Service University graduate students needed to utilize e-resources?

Information literacy is a set of skills or competencies for recognizing, searching, locating and accessing, evaluating and using the needed information from the sources. It encompasses different type literacy such media literacy, library literacy, tool literacy, computer literacy, network literacy and digital literacy. For the development of individual information literacy skill all of them are essential because each literacy is interrelated with one another. To investigate what type of information literacy skills students had needed, the researcher was provided four types of literacy under below.

A. Tool Literacy

Table 4. 12 Tool Literacy Knowledge

Respondents	Number	Percentage (%)
Yes	44	26.7
No	121	73.3
Total	165	100

Question A 1 was designed to know the respondents' awareness about tool literacy. It is very important individuals be able to understand the practical and conceptual information technology tools. Results showed in the above Table 4.12, 121 (73.3%) of respondents have not had skill of tool literacy. While, 44 (26.7%) respondents have had tool literacy knowledge.

B. Computer Literacy

Table 4. 13 Computer Literacy Knowledge

Respondents	Number	Percentage (%)
Yes	136	82.4
No	29	17.6
Total	165	100

Question B 3 was developed to examine either respondents' familiarities or not about computer. Finding indicate that majorities of 136 (82.4%) participants have had computer literacy skill. Whereas, 29 (17.6%) of them have not had computer literacy knowledge.

Question B 4 was designed to ensure respondents who have had knowledge of computer literacy in question B 3, whether they have had or not a computer. Results showed that below in *table 4.14*, 63 (38.4%) have accessed to computer at home, 53 (31.7%) of participants were accessed at the office, whereas 49 (29.9%) of them were accessed at the library.

Table 4. 14 Accessed to Computer

Respondents	Number	Percentage (%)
At home	63	38.4
At library	49	29.9
At office	53	31.7
Total	164	100

Question B 5 was developed to know respondents' to accessed internet. Results show below in *table 4.15*, majorities 133 (97.8%) of the total respondents have used the internet. While, 3 (2.2%) of the respondents were not used internet.

Table 4. 15 Using Internet

Respondents	Number	Percentage (%)
Yes	133	97.8
No	3	2.2
Total	136	100

C. Network Literacy

Question number C 7 was developed to know whether respondents were familiar for network literacy or not. In fact, it is an essential skill for everyone in networked information society, particularly for the students independently to identify, locate, retrieve, and use electronic information resources in a networked environment. However, results reflected that below in *Table 4.16*, majorities of 114 (69.1%) of the respondents affirmed that 'No' they were unfamiliar. While, 51 (30.9) of them were 'yes'.

Table 4. 16 Network Literacy Knowledge

Respondents	Number	Percentage (%)
Yes	51	30.9
No	114	69.1
Total	165	100

D. Digital Literacy

Question number D 9 was designed to know the respondents' familiarity with digital literacy. It is an essential skill in this digital age because information available online in different forms and formats. It provides an ability individual to access the needed information in multiple formats from a wide range of information sources or networked computer access. To use digital tools to identify, access, manage, evaluate, analyze and synthesize digital resources. The responses shown in the table 4.17 below.

Table 4. 17 Digital Literacy Knowledge

Respondents	Number	Percentage (%)
Yes	39	23.6
No	126	76.4
Total	165	100

The above table shows the data about the respondents' knowledge about digital literacy. It shows that 76.4% of the respondents were unfamiliar with digital literacy while 23.6% of the respondents are aware of digital literacy.

4.3.4. Research Question 4: What methods are used by Ethiopian Civil Service University graduate students to acquire information literacy skills?

To develop information literacy skill, the acquisition of information literacy skill is a fundamental need for individuals to access available information resources from various sources though the different information access tool. Hence, to improve and maximize utilization of e-resources the acquisition of information literacy skills is essential for people, especially for students to accomplish a specific purpose. Under this section the first question (q1) and the second question (q2) were asked respondents about whether or not their institution was provided an information literacy training for the use of electronic information resources and the importance of the training if the organization deliver the training, results in table 4.18 shows that 36 (21.8%) of the respondents were affirmed that the institution offered the training and all of those students were agreed with the importance of the training for them. While, 129 (78.2) participants were agreed with no. This condition might be happened from two angles; one from the institution perspective view, which is the organization may not be advocated or create an awareness, timely and appropriately the essential of information literacy skill training for the students. As well as the training provider (the institution) might not inform, well the students, if they attended the training; they become an information literate person and the implication of this where students be able to search, locate and access, evaluate and use information from different sources. On the other side from students' point of

view; they may not be informed as such skills were offered or not by the institution and also, they may not be recognized the indispensability of the training for them.

Table 4. 18 Information Literacy Skill Training Provided by ECSU

Respondents	Number	Percentage (%)
Yes	36	21.8
No	129	78.2
Total	165	100

The third question (q3) was requested participants for the acquisition of information literacy skill. Results were indicated that below in table 4.19, in Ethiopian civil service university students acquired information literacy skills through Training offered by faculty (N=7; 19.4%), Training offered by university library (N=17;47.2%) this indicated that librarians can enable students to achieve information literacy skills, Formal education (N=2, 5.5%) teaching information literacy proficiency is very important and it ensure all learners must be involved in the education and the last one is Guidance from library staff (N=10,27.7%); regarding with this, library employees have several responsibility to support students and be able to recognized when information is needed, know where and how to find the needed information, search strategies; which includes online catalogue, online database, subscription journal article, evaluation criteria of the information; up-to-date, unbiased and authenticity (Nutefall 2001). Hence, all of these ways are essential and allow students to solve their information problem.

Table 4. 19 Information Literacy Skill Acquisition Methods

Respondents	Number	Percentage (%)
Training offered by my faculty/department	7	19.4
Training offered by my university library	17	47.2
Formal education	2	5.5
Guidance from library staff	10	27.7
Total	36	100

4.4. Hypothesis Testing

This section was presented the result of null hypothesis tests. In this study, the researcher was formulated two null hypotheses based on the research objective and tested it at 0.05 level of significance. The outcomes were presented below.

4.4.1 Hypothesis 1: There is no significant differences on the level of information literacy skills possessed by the College of Urban Development and Engineering (CUDE) and College of Finance, Management and Development (CFMAD) graduate students in the Ethiopian Civil Service University.

To identify whether there were statistical significances difference was existed or not between CUDE and CFMAD college students on the level of Information Literacy skill according to the respondents' colleges or grouping variable (i.e. CUDE vs CFMAD), the researcher was employed an Independent t-test using Levine's Test for Equality of Variances. The results were shown that below in table 4.20 the "P" value of each skill was > 0.05 . Hence, there was not found statistically significant differences were existed on the level of Information literacy skill among the two college students. Therefore, based on the result of the study the null hypothesis was accepted.

Table 4. 20 Independent T-test the Level of Information Literacy skill Between CUDE and CFMAD College Students.

Skill	t-test for Equality of Means						
	Colleges	N	Mean	SD	T value	df	P value(2-taild)
Formulating questions based on information needs	CUDE	76	2.51	0.95	1.42	163	0.15
	CFMAD	89	2.29	1.02			
Developing successful search strategies	CUDE	76	2.35	0.975	0.48		0.62
	CFMAD	89	2.28	0.976			
Identifying and Accessing potential sources of information	CUDE	76	2.51	1.03	-0.164		0.87
	CFMAD	89	2.53	1.00			
Evaluating information and its sources	CUDE	76	2.35	0.85	-0.54		0.59
	CFMAD	89	2.43	1.07			
Using information in critical thinking and problem solving	CUDE	76	2.50	1.01	0.17		0.86
	CFMAD	89	2.47	1.08			

4.4.2 Hypothesis 2: There is no significant relationship between Information literacy skill ability and utilization of e-resources in Ethiopian Civil Service University graduate students.

To test the relationship between Information literacy skills ability and utilization of E-resources, the correlational coefficient of the respondents' response was undertaken. To conduct the correlation calculation, first the mean score value of the four (4) Information literacy skill ability and the eight (8) electronic information sources utilization were computed thereafter the formulated hypothesis was tested.

Results revealed that below in table 4.21, there was a positive significant relationship between Information literacy skills ability and utilization electronic information sources. Results showed that in the table, a Pearson Correlation Coefficient (r) was $=0.945$; $df = 163$; ($P < 0.05$) calculated, which indicated that there was a significant relationship between information literacy skills ability and utilization electronic information sources. Therefore, Information literacy skills were positively and strongly related with utilization of electronic information resources. This implies that having high information literacy skill lead to increase the utilization of electronic information resources.

Table 4. 21 Correlational Coefficient of ECSU Graduate Students Information Literacy Skill Ability and Utilization of Electronic Information Resources

Variable	Mean	Std	N	DF	r	p	Remark
Information literacy kills ability	2.46	1.01	165	163	0.945	0.000	Significant
Utilization electronic information sources	2.43	1.15					

Correlation is significant at the level of 0.05 (2-taild)

As a further test multiple regression analysis was performed the relationship between information literacy skills and utilization electronic information resources (See in table 4.22 and 4.23). Similar results were obtained; as results indicated that the four Information literacy skills ability were relevant towards the determination of electronic information sources utilization. The ANOVA test in Table 4.18 revealed that the F-ratio for the regression is significant ($F = 344.117$; $P < 0.05$). This means that the R value of 0.947 is not due to chance. Therefore, the null hypothesis was rejected.

Table 4. 22 Summary of Multiple Regression Information Literacy Skills Influences on the Utilization of Electronic Information Sources

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.947	0.896	0.893	0.377

Table 4. 23 ANOVA for the Regression of Utilization of Electronic Information Sources

Source of Variance	Sum of Squares	Df	Mean Square	F	sig

Regression	192.016	4	49.004	344.117	0.000*
Residual	22.78	160	0.142		
Total	218.801	164			

Chapter Five

Summary of the Findings, Conclusion and Recommendation

5.1. Introduction

This chapter presented a summary of the finding, conclusion, recommendation, suggestion for further research and the researcher contribution of this research. The finding of the study is organized based on the design research questions and hypothesis.

5.2. Summary of the Findings

5.2.1. Level of Information Literacy Skills of Ethiopian Civil Service University Graduate Students

The level of Information literacy skills of the two college students i.e. CUDE and CFMAD are determined based on the response of the respondents. The results were depicted that in Table 4.5 and 4.6, the average mean score value of each given statement and the overall average mean score values of the two college students were calculated independently. Results as shown in Table 4.5 and 4.6 the first statement was '*Formulating questions based on information needs*', the findings were indicated that the mean score value of CUDE college students were ($X=2.51$) and CFMAD ($X=2.29$); this indicates that CUDE college students can construct query to find information based on their need, but CFMAD students can't develop questions to seek the needed information. The second statement was '*Developing successful search strategies*' the mean score value of CUDE ($X=2.35$) and CFMD ($X=2.28$) this indicated that both of them were below the midpoint value of the mean score value, therefore, they are categorized under the low level of information competencies. The other statement was '*Identifying and Accessing potential sources of information*' results were showed that in CUDE ($X=2.51$) and CFMAD ($X=2.40$) so that, in contrast college of CUDE was above the half point value of the mean score while, CFMAD was below the half point value. Whereas, in '*Evaluating information and its sources*' results were revealed that in CUDE ($X=2.35$) and CFMAD ($X=2.59$). The last statement was '*Using information in critical thinking and problem solving*' results indicated that the mean score value of CUDE college students were equivalent to the midpoint value ($X=2.5$) and CFMAD college students were ($X=2.59$) above the acceptable mean value so that, this indicate that both of them are used information properly to solve problem at hand.

Generally, from the finding of the overall mean score values of the two college students were indicated that below the midpoint value of the mean that is, in CUDE college students the overall mean score value was recorded ($X=2.44$) and CFMAD college students were ($X=2.40$). Therefore, this indicated that in Ethiopian Civil Service University both of CUDE and CFMAD graduate students possessed a low level of information literacy skills.

5.2.2. Problems that are encountered to Utilize E-resources in Ethiopian Civil Service University Graduate Students

Under this section, to present the outcome of the finding and what problems students were encountered to utilize e-resources in Ethiopian Civil Service University graduate students' results were presented in four categories:

Information Searching Ability

Searching is the process of seeking the needed information from the sources. Based on the result of the analysis, students' information searching skills is determined. There were provided four items to indicate their skills, from those items the mean score values are lower than the acceptable average mean score value. And also, the total average mean score value of all the items were below the acceptable score, which was ($X = 2.48$). This indicates that Ethiopian civil service university graduate students that is both CUDE and CFMAD haven't sufficient information searching skills to seek information from online information resources, database, library and freely available information on the internet using different key words, phrases or synonyms. They have insufficient skill to develop an appropriate search strategy and applying different logical operators using (and, or, not) Boolean operators to retrieve relevant information resources. Because logical operators allow individuals (searchers) to combine words or phrases which could help us to broad and narrow the search results from the sources.

Information Locating and Accessing Ability

This is a process of retrieving pertinent information based on searching strategies using different means. The students' capability was investigated by providing four basic questions how to locate and access the needed information from the sources. As shown in Table 4.8 results were indicated that, only one item (number 3) out of the provide 4 items mean score value was equivalent to 2.5, which is the acceptable mean score value. This stated that most of the students are able to locate and access information from databases, e-journals and e-book sites. While, the remained 3 items (number 1, 2 and 4) have lower mean score value and the total average mean score result of all of the items was ($X = 2.46$) this indicated that lower than the acceptable mean score value 2.5. Hence, this result implies that both CUDE and CFMAD graduate students possessed insufficient skill or ability to locate and access information using internet search engines, web based OPAC, online databases and cited bibliography.

Information Evaluating Ability

In the era of the information age, information is available on online in different forms and formats. However, every information which is available in the networked environment not always correct and authentic. Hence, evaluating the sources and the information you intended to use for your task is very important. The findings were revealed that in the table 4.9, from the provided four items only one item

(number 4) has an acceptable mean score value which is 2.52. However, the other 3 items (number 1, 2 and 3) have lower mean score value. This indicated that the students have a poor skill regarding with evaluating the sources of the information and the resources its' authoritativeness; Is the people, organization, or institution responsible for the content the information who created, timelines; the date of the information published or the latest version of the information, correctness and reliability. Inability to draw conclusion by comparing and evaluating the credibility and relevancy of the information gathered. Therefore, the total average mean score value of all of the items which are calculated ($X=2.48$) which is below 2.5. This indicated that the students possessed poor information evaluation ability.

Information Use Ability in an Ethical Manner

The ethical and legal use of information is one aspect of information literacy skills. The students' information use skills were determined through providing various questions for them. The results were as indicated that in Table 4.10; from the provided three items, all of the entire 3 items mean score values were less than 2.5, which is below the average acceptable mean score value. And also, the total average mean score value of all of the item was ($X= 2.45$) which is below the acceptable mean score value. Therefore, the implication of the result was a greater number of students did not know how to select the relevant sources of information like library websites, gateways, portals, databases, journal sites and open access because all of these are sources of information. To avoid plagiarism, they didn't know how to use intext-citation, use paraphrasing, don't just make cosmetic change from sources during writing their own assignment or project to give an appropriate acidity for the owner of the work. As well as most of the students didn't know how to write cited bibliography or references practically. Therefore, for all this reason Ethiopian Civil Service University graduate students have poor skills appropriately to use the needed information from the sources in a responsible manner.

5.2.3. Components of Information Literacy Skills ECSU Graduate Students Have Needed to Utilize E-resources

Tool literacy: - The result of the study indicated that in Table 4.12, majorities of the students, 73.3% had not the skill of tool literacy. This implies that students unable to understand and use both the practical and conceptual of information technology tools.

Computer literacy: - The Finding of the study showed that in Table 4.13 majorities of 82.4% of students had a computer literacy skill. This indicates that students can use both the application of computer hardware and software to accomplish a given task.

Network literacy: - The result of the study reveals that in Table 4.14, most of 69.1% of the students have lack of network literacy. Therefore, this indicated that students unable to identify, access and locate and use electronic information resources from the network environment.

Digital literacy: - As shown in Table 4.15 findings revealed that, 76.4% of the students were unfamiliar about digital literacy. The implication of this result indicated that there is a challenge the students to use electronic information resources in different forms and formats using digital tools. And also, they are unable to make informed judgments about what they find from online information sources because students have poor digital literacy skill.

5.2.4. The Methods used Ethiopian Civil Service University graduate the students to acquire information literacy skills

The finding of the study indicated that 78.2% of the respondents claimed that their institution did not deliver Information literacy skill training. This shows that, the institution (ECSU) has not had given a great attention the necessity of information literacy skill training to produce an information literate student. However, 22.8% of the respondents were reported that their institution was provided the training though different ways. The result in Table 4.16 shows that the students in the Ethiopian Civil Service University acquired information literacy skill through university library (N=17;47.2%), guidance from library staff (N=10,27.7%), faculty (N=7; 19.4%) and formal education (N=2, 5.5%) respectively. Based on the result most of the students affirmed that training offered by the University library this indicated that, University library is a forefront providing information literacy skill training and guiding the students to improve their information literacy competencies and maximized information utilization capacity.

5.2.5. Level of Information Literacy Skills Possessed by CUDE and CFMAD Graduate Students in ECSU

The finding of the study indicated that in the analysis Table 4.20, the level of information literacy skills between the two college students (CUDE and CFMAD) were determined. Results as shown that in Levine's Test for Equality, out of the provided five statements, there is no statistical significance differences were existed between them because the 'P' value of each skill was greater than 0.05. Similarly, based on Table 4.5 and 4.6 the overall average mean score value of the two college students were below the acceptable value therefore, they possess low levels of information literacy skills.

5.2.6. Correlation Relationship Between Information Literacy Skill Ability and Utilization of E-Resources in Ethiopian Civil Service University Graduate Students

The result of the test as shown that in Table 4.21, the relationship between graduate students' information literacy skill and their utilization of electronic information resources indicate that there is a positive and strong significant relationship between the two variables ($r=0.945$; $df = 163$; $P<0.05$). This agreement is similar with (Adeleke and Emeahara 2016), who conducted the study relationship between Information

Literacy and Use of Electronic Information Resources by Postgraduate Students of the University of Ibadan. Therefore, the Information literacy skills of graduate students significantly affect their use of electronic information resources. This result suggests that, when graduate students are improved their information literacy skill, similarly, their use of electronic information also improve so that, the two variables have a direct and robust relationship.

5.3. Conclusion

Based on the finding of the study, Ethiopian civil service university graduate students were not effectively utilized electronic information resources. Due to the fact that, the students have poor information literacy skills and encountered different information literacy skills such as information search skills, locate and access skill, evaluation and use skill. And also, majorities of the students are unfamiliar for different components of information literacy skill which includes that tool literacy, network literacy and digital literacy. The main reason is the University didn't give attention appropriately for the necessary of information literacy skill training for the student to use electronic information resources from various sources.

Information literacy skill has a positive significance relationship to utilize e-resources. In this contemporary technological environment, the requirement of information literacy skill is unquestionable because of individuals that are faced with diverse and abundant information choices in their personal lives, workplaces, and academic studies. Unfiltered information formats come up from multiple direction; due to this the authenticity, validity, and reliability of the information are under question mark, and the quality of the information has a large challenge for the students. Therefore, to solve as such barriers information literacy skill is a fundamental need for the students like other basic needs.

Due to the radical change of Information and communication technology the provision information resources shifted from printed (hard copy) into a non-printed (electronic) format. Different information provider organizations are used varies information system, databases and repositories to make available and offer electronic information resources for the end users across the world. Therefore, to ensure maximum utilization of the available information resources and to minimize the complexity of accesses an adequate information literacy skills, competencies, knowledge and strategies is required for the students.

5.4. Recommendation

Based on the findings of the study, the following recommendations are suggested to improve students' capability for the utilization of electronic information resources:

- ❖ Information literacy a necessary skill which ensures that individuals have a grounded knowledge to utilize electronic information from various sources. To meet students' information literacy skill, ECSU library should offer adequate information literacy skills trainings, preparing different workshops, seminars, and tutorials to transfer the students from novice information literate person to an expertise.
- ❖ The University librarian should prepare a necessary guideline for the students as a stakeholder and deliver the instruction how can students search, locate, evaluate and use information from various sources of information. Upload the guidelines on the library websites easily the students can find and accesses it. Actually, professional librarians possess a better understanding about information literacy skill so that they have a responsibility to incorporate information literacy competencies to ECSU graduate students.
- ❖ To improve and upgrade students' information literacy knowledge frequently delivering different workshops/seminars regarding to information literacy skill.
- ❖ Adding the Information literacy courses in the curriculum as compulsory course like research methodology. It allows students to acquire fundamental pre-request competencies to utilize electronic information in a full range.

5.5. Direction for Further Research

This study was conducted on the governmental educational institution called the Ethiopian Civil Service University on regular graduate students. To carried out the study, the researcher used a descriptive survey method. The study was focused on assessing the effect of Information literacy skill to accesses e-resources; determining the level of Information literacy skills between CUDE and CFMAD, investigate the problems the students who are encountered to accesses e-resources from the sources, their awareness for components of Information literacy and methods to acquired information literacy skills. The future researchers may need to ascertain the result of this study in the following way:

- ❖ Information literacy skills in weekend and regular education graduate students
- ❖ Gender based study – Information literacy skills of male and female graduate students within a faculty
- ❖ A comparative study of Information literacy skill between faculty of government and private universities.
- ❖ Experimental study- the effect of information literacy skill to access e-resources

5.6. Researcher Contribution

In Ethiopian Civil Service University there is no similar research undertaken about information literacy skill to access electronic resources. In this study, the researcher tried to indicate the need and importance of information literacy skill to utilize e-resources. And also, provided the following literatures:

1. The study assessed the general level of students' information literacy skills and to maintain or improve their level of skills the researcher provided the necessary suggestion based the findings. This will assist the stakeholders it may be libraries or departments to improve students' information skill.
2. It has provided data on graduate students' information literacy skills and what problems were encountered to access e-information from various sources such as e-book and e-journal site, institutional repository, database, or archives though different access tools.
3. The finding of this study agreed that the University library is a leading stakeholder for the provision of information literacy skill training for the students to maximize information accesses skill to achieve their academic objective.
4. This study has also shown, the relationship between information literacy skills and utilization of electronic information in Ethiopian Civil Service University graduate students.

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Survey Questionnaires

Addis Ababa University

School of Graduate Studies College of Natural Science

Department of Information Science

Dear Respondents;

First, I would like to thank you, for your willingness to participate in the study and give your responses for this questionnaire. This research is being conducted to the partial fulfillment for the Degree of Masters of Science in Department of Information Science at Addis Ababa University on the title, “**The Effect of Information Literacy Skills on The Utilization of E-Resources: The Case of Ethiopian Civil Service University Graduate Students**”.

The main aim of this study is to assess the effect of **Information Literacy skill**; in order to, locate, evaluate and use electronic resources by students effectively and efficiently. Your honest and real response for each question is extremely important to the outcome of this study. The data to be collected through this questionnaire will be used only for educational purpose and your response will be confidential secured. Therefore, I kindly request you to provide the required information as much as possible.

For Further information, please contact the researcher using the following address.

Phone Number: +251912137350

Email: sme19.dagne@gmail.com

General Instruction

- **This questionnaire has four section**
- **Please put your response with a tick (✓) sign in the appropriate place (Note some questions may have multiple answers)**
- **No need to write your name**

Section I: Respondents Profile

- For each question, please mark your response with a tick (✓) sign.

1. Sex Male [] Female []

2. Age 24 or below [] 25-30 [] 31-36 [] 37-42 [] 43 or above []
3. Your College CUDE [] CFMAD []

Section II: Respondents Opinion about Information Literacy Skills to Accesses E-Resources

Q.1. How would you rate your level of information literacy skills for each of the following questions below? Please put a tick (✓) in the box at the appropriate spot:

VH = Very High **H** = High **N**=Neutral **L** = Low **VL** = Very Low

No	Variables	VH	H	N	L	VL
1	Formulating questions based on information needs					
2	Developing successful search strategies					
3	Identifying and Accessing potential sources of information					
4	Evaluating information and its sources					
5	Using information in critical thinking and problem solving					

Q.2. Please indicate your level agreement for the extent to which your information literacy skills ability **searching, locating and accessing, evaluating and using information in an ethical manner** respectively? Please put a tick (✓) sign in the box at the appropriate spot:

SA = Strongly Agree **A** = Agree **NS**= Not Sure **DA** =Disagree **SD** = Strongly Disagree

No	Variables	Your Response				
	Your Information search ability skill	SA	A	NS	DA	SD
1	I have the ability to identify the most relevant sources of information					
2	I can prepare a search plan using diverse keywords, phrases, or synonyms					
3	I can introduce search strategies using Boolean logic (and, or, not,					

	*..., "...", etc)					
4	I can criticize searching process and its products					
	Your ability to locate and access information	SA	A	NS	DA	SD
1	I can locate information sources using internet search engines					
2	I can locate information sources using web based OPAC					
3	I can locate information sources using e-journals, e-books, or full-text databases					
4	I can locate information sources through examining the cited bibliography					
	Your Information evaluation ability skill	SA	A	NS	DA	SD
1	I have the capability to evaluate information sources					
2	I can determine the authoritativeness, correctness, timeliness and reliability of the information resources					
3	I can compare and evaluate critically whether the information collected is credible and relevant					
4	I have the ability to identify different sources of information					
	Your ability to use information in an ethical manner	SA	A	NS	DA	SD
1	I have the ability to sort information sources and select the most relevant					
2	I can use in-text citation in an appropriate way					
3	I can write the cited bibliography in an appropriate way					

Q.3 Please indicate your frequency usage of electronic information resources. Please put a tick (✓) sign in the box at the appropriate spot.

NO	Electronic information resources	Response				
		Always	Often	Sometimes	Rarely	Never
1	E-journals					
2	E-books					
3	Institutional repository					
4	E-references					
5	Online Database					
6	Online Catalogue					
7	Encyclopedia					
8	E-data archives					

Section III: Respondents perception about components of information literacy

E. Tool Literacy

- Do you know about tool literacy?
☐ Yes ☐ No
- If yes, what types of tool literacy is essential?
☐ Providing basic troubleshooting assistance with IT applications available at library workstations
☐ Providing training and basic troubleshooting assistance with a nominated bibliographic software package.
☐ Providing training on search formulation
☐ Any other-----

F. Computer Literacy

- Do you know about computer literacy?
☐ Yes ☐ No
- Do you have access to a computer? You can choose more than one.
☐ At home ☐ At Library ☐ At office ☐ Any other
- Do you use the Internet?

☐ Yes ☐ No

6. If you use internet, do you use search engines?

☐ Yes ☐ No

G. Network literacy

7. Have you heard about network literacy?

☐ Yes ☐ No If yes,

8. Do you think network literacy is essential for the information retrieval?

☐ Yes ☐ No If yes,

9. Why it is essential?

☐ To define information needed for specific purpose.

☐ To locate information needed from network with efficient information retrieval methods, skills and tools.

☐ To select and evaluate information gained from networked information on a given topic.

☐ To manipulate and organize networked information with other resources to enhance its values.

☐ To utilize analyze and present networked information for problem solving and life long learning.

H. Digital literacy

10. Do you understand what digital literacy is?

☐ Yes ☐ No If yes,

11. For what purpose you apply it?

☐ To identify, access, evaluate, manage and use the needed information from online database

☐ To create your own digital content in the learning environment

☐ To use digital tools

☐ others-----

Section IV: Information Literacy Skills Acquisition

1. Does your institution provide information literacy training on the use of information resources?

☐ Yes ☐ No if you yes,

2. Do you consider the training is necessary?

☐ Yes ☐ No if you yes,

3. How do you acquire basic Information literacy skills? (tick $\checkmark$ as many as applicable)

☐ Training offered by my faculty/department

☐ Training offered by my university library

[] Formal education

[] Guidance from library staff

[] Other-----

4. In the digital age, what do you think about the role of information literacy skill to achieve your own goal? You can write your opinion openly.

5. Any other comment-----

