ASSESSMENT OF INFORMATION SEARCHING SKILLS OF UNIVERSITY STUDENTS IN AN ELECTRONIC ENVIRONMENT: THE CASE OF STATE UNIVERSITY OF ZANZIBAR

MWANAKHEIR A. ABDALLA

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CERTIFICATION

I certify that I have read and hereby recommend for acceptance by the Open University of Tanzania (OUT) a dissertation entitled "**assessment of information searching skills of university students in an electronic environment**; **a case of State University of Zanzibar** in partial fulfillment of the requirement for the award of the degree of Master of Library and Information Management (MLIM) of the Open University of Tanzania.

……..……

Dr. Henry l. Mambo

(Supervisor)

……..…….

Date

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DECLARATION

I, **Mwanakheir A. Abdalla,** declare that, this dissertation is the result of my own original work and that it has never been presented to any other University for a similar or any other academic award.

Where other people's works have been used either from printed sources, internet, or any other electronic sources they have been properly acknowledged and referenced in accordance with the University requirements.

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Signature

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Date

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DEDICATION

This work is dedicated to my beloved husband, Mr Juma Nassor. I also dedicate this work to my lovely sons Munir and Nassor and my daughters Munira and Noureen and lastly to my office for love and support which enabled me to accomplish my studies. May Almighty Allah reward them All, Amiin.

ABSTRACT

The study assessed information searching skills of university students in an electronic environment taking the State University of Zanzibar as a case study. The study specifically assessed the information searching skills of university students in an electronic environment in the university library, the effects of information searching skills and challenges of information searching skills in an electronic environment. The study involved the use of case study design in which sample sizes of 150 respondents were selected by using purposive and random sampling techniques. Data were collected through questionnaires and interview. The analysis of data generally was based on qualitative approach with absorption of quantitative approach for some of data that required quantifiable justification. The study findings revealed that, the University library used a combination of tools for information searching in an electronic environment.They include; university memo, ICT tools, face to face information, internal meetings, email and intranet. Also, the findings revealed that internal information skills within the university library has numerous positive effects such as creation of work harmony, increasing organisation control towards uncertainty and risk, giving the directions to reach performance of planned goal and facilitates the distribution of the information timely for better decission making. Furthermore, the study found that, poor channel of information communication, wrong perceptios of information among employees, late information dissemination and timing, ineffetcive information searching strategy, information linkage and information barriers were the main challenges of information searching in the University. Finally, the study recommended that the way of improving searching skills and performance among other things should include eastablishment of comprehensive information searching skills strategy to the University.

Keywords: *Information Searching Skills, University Stududents, Electronic Environment, Zanzibar*

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LIST OF ABBREVIATIONS

ICT:	Information and Communication Technology
SMZ:	Serikali ya Mapinduzi ya Zanzibar
SUZA:	The State University of Tanzania
OUT:	The Open University of Tanzania

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

Immediately after the rise of the Revolutionary Government of Zanzibar on 12th January 1964, the Government committed to provide free social services, such as; education, health, water and housing to every person in Zanzibar. Moreover, after the adoption of the transformative government development policy in the 1999`s, the education sector also greatly was substantially transformed. In 1988, the State University of Zanzibar (SUZA) was founded and served as the school (Abdullkadir, 2017).

The Ministry of Education took further measures to improve the education sector by designing the Zanzibar Education Master Plan (ZEMAP) in 1996, amending the Education Policy in 2006 and revising Zanzibar Education Development Sector Plan (ZEDP) in 2017. The motives of these Government initiatives were to ensure that education services were provided in all social levels and meet the high level in community needs. Moreover, the proper strategies were designed but more efforts were taken to construct and establish School of Education, School of health, School of Tourism and schools of Agriculture which are furnished, equipped and have enough teaching the information searching skills and learning facilities (ZESP, 2010/2015).

Schools' infrastructure was given priority but mostly in reviving SUZA School and their services. World wide, it is believed that the future economic, scientific and

technological developments in various countries will depend on work forces equipped with right skills and knowledge whereby University services have an important role to play in realizing those objectives (ZESA, 2015). Further, according to (ZEMAP 2016), advancement of technology and information has forced people to device ways of creating, searching and using information for various uses.

Electronic technology and information are mutually reinforcing phenomena. One of the key aspects of living in this age is the growing level of interactions people have with the complex and increasingly electronic environment. Along with the advances in web technologies, the teaching-learning activities that are conducted on the Internet are also rapidly diversifying. As the Internet becomes a significant source for the teaching-learning process, learners' Internet skills are expanding to include information literacy skills such as access to information, acquisition, evaluation and utilization (Kabakçı, Fırat, İzmirli & Kuzu, 2010).

Cognitive strategies are significant for easy and rapid access of individuals to accurate and reliable information, and conducting various cognitive processes such as; analysis, evaluation and decision-making during the process of access to information. It is important for the students to decide on the adequacy, reliability and relative quality of the acquired information, as well as the search and access of information on the Internet that they use as a primary source of information for their homework, projects and presentations.

Du and Evans (2011) investigated how doctorate students search for information for

their real-life research tasks. Interaction with multiple search systems, exploration of popular search engines, use of basic search function, construction of multiple search queries, multi-tasking reformulation, parallel reformulation, and recurrent reformulation were the searching strategies discovered as a result of the study. In fact, in a study conducted with high school students, it was concluded that the students' awareness on the authenticity and reliability of the resources on the internet was inadequate (Esgin, Baba, Aytaç & Turan, 2011).

1.2 Statement of the Problem

Romano and Vinelli (2018) indicates that information surching skills performance in university is facing challenges that sabotage its practices in most underdeveloped countries. In the construction universities are under overwhelming pressure to manage, mitigate and searching skills effectively (Matto, and Bwabo, 2012). The current competitive university regime means that, university must assesses searching skills quickly so as to manage changes by strategically allowancing with each other. In Kenya, it is reported that as high educational institutions as seventy percent (70%) of public University experience the information searching skills of university students in an electronic environment which in turn impact adversely on service delivery (Bøyum and Aabø, 2015). Kembro, Näslund and Olhager (2017) examined information sharing across student searching skills. The study found out that the information technology involved in the demand and searching skills as the degree to which university environment, partners have on hand information related to demand and information in a university environment. The study recommended focusing on timely data acquisition for those data points, which drive the adaptation.

The assessment involved in University information flow can become a barrier of information searching skills implementation. Also, they recommended engaging in discussions with information skills agencies at an early planning stage.

Tanzania has witnessed drastic growth of information technology in different University. The State University of Zanzibar is the best exemple of university environment which has no option rather to adopt it. However, in the recent years the world has manifested quite a substantial changes in the information searching skills in university environment alongside its subsequent effects in the society. Vijaya Raghavan (2012) noted that basically information searching skills refer to the emergence of the private university.In public university as pointed out earlier had gained more momentum with the 21 century as it rapidly spread throughout the world including Zanzibar.

Despite the fact that the State University of Zanzibar utilized well information technology in its daily activities still there there has not been an effective use of information searching skill in academic environment (Wolters, 2016). That is reason why the study assessed information searching skills of university students in an electronic environment.

1.3 Objectives of the Study

1.3.1 The General Objective

The general objective of the study was to assess the information searching skills of University students in an electronic environment with reference to State University of Zanzibar.

1.3.2 Specific objectives

1.3.3 The Specific Objectives of the Study were

i. To find out the electronic information sources and services available to the surveyed library;
ii. To examine students ability to search information in electronic environment;
iii. To explore challenges faced by students in searching electronic information; and
iv. To examine the appropriate ways of improving student's information searching skills in an electronic environment.

1.4: Research Questions

The Study was guided by the following Research Questions;

i. What were the electronic information sources and services that are available to the surveyed library?
ii. To what extent did students abled to search information in electronic environment?
iii. What challenges did the University students face when searching for information in electronic environment?
iv. How do you view the library prepared to help students searching needs in an electronic environment? and

1.5: Significance of the Study

This study was useful to students, library staff as well as to the university management in general. The findings of the study were provided a good opportunity to student to design, develop and use information retrieval and search systems in an

electronic environment. It will also introduce students to the principles of information storage and retrieval systems and databases. The findings of this study would also create awareness on the part of librarian and students on the techniques involved in conducting effective searches of online information resources. The findings of this study would also add knowledge to the search specifically on information searching tools which would facilitate location of information stored in databases, together with the methods and measures that can be used to evaluate them. Also the findings of this study would stimulate further studies in related area of field.

1.6 Definitions of Key terms

1.6.1 Information

Dictionary of computing and communication; (2003) defines information as data which has been recorded, classified, organized, related or interpreted within a framework so that meaning emerge. In this context, information is a generic term which comprises of all documents that are relevant and useful for the students learning activities.

1.6.2 Information Management

Information Management is the process of information identification, production, classification, storage, dissemination and utilization considering the organizational, cultural, social as well as technological components.

1.6.3 Electronic Information

Electronic information means any information provided by a rights owner that identifies a work, performance, phonogram, videogram, program or rights owner,

any information about the terms and conditions of use of a work, performance, phonogram, videogram or program, and any number or code that represents all or part of such information (Kassen, (2022).

1.6.4 Information Searching

Information searching is the process of attempting to acquire information or data (Mehta, 2000). In the context of this study, information searching is a process of locating, recalling and seeking for information to solve a particular problem.

1.6.5 University Student

Longman Dictionary of contemporary English, (2006) define university students as the students who study for degree at the highest-level of educational institution. In this study, the university students mean those students undertaking the degree including postgraduate and undergraduate.

1.6.6 Management Information System

Is a system consisting of people, machines, procedures, databases and data models, as its elements. The system gathers data from the internal and external sources of an organization. Management information system is an acronym of three words, viz., Management, information and system.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the existing literature related to the ability of users, specifically university students, to use modern technology for searching academic materials. It provides an overview of the electronic information searching skills as well as use of various formulation of research strategies, information retrieval system and information retrieval process; and factors affecting electronic searching process. It further explores information gap which prompted the researcher to conduct this study.

2.2 Theoretical Literature Review

Ability to search information is key to information seeker but many of them are not able to search and get information of their interests as needed and timely. This situation show that the essential skills to choose the best source for a given type of information is lacking to most library users(Nhidirwa Zawedde, 2018). Despite the massive benefits of digital environment resources in universities, Matto, and Bwabo (2012) have realized that the digital environment utilization and availability rate in those Institution in Zanzibar was low. This has led to over reliance on the searching materials that are becoming scarce due to increasing student population in universities especially researchers. In fact, most of users seem to lack necessary skills essential for evaluating and analyzing the electronic information retrieval (Mwadini, 2017).

Detlor and Serenko (2012) conducted a web-based survey on the adoption of online library resources by undergraduate business students. Bøyum and Aabø (2015) found out that the doctorate students of business in Norway perceived that they had mastered the search techniques. Shoeb (2011) conducted an information literacy skills test in a private university of Bangladesh. He found that the undergraduate business students were very weak in their information searching skills. Majid, Hayat, Patel and Vijaya Raghavan (2012) surveyed master level business students in Singapore.

The online information resources are powerful teaching and learning tools in higher education. They are efficient for activating students, and they provide tools for life-long learning. Internet provides the platform for global information accessibility and allows students to have access to a large number of information and a number of free applications software. It enables teachers and students to communicate through e-mail, course home pages and virtual discussion groups, and provides opportunities for distance education in tertiary institutions. Students can find information themselves to a larger extent than before, though they still need their teachers' supervision in the learning process because most of the information resources found on the internet were not peer reviewed. (Ntando Nkombo, 2011).

Limited access to online information resources in this information age greatly affects the students in different ways. For instance, they find it difficult to do research and even write some of their assignments. They are limited to only the information their lecturers have to offer alone. And even if they graduate, they may soon forget what

they learnt because they have not learnt how to learn i.e. they have not developed the ability for life-long learning. (Ntando Nkombo, 2011).

The University of Idaho Information Literacy Portal (2011) information literacy is the capability to identify needed information, understand organisation of information, identify appropriate information sources, locate these sources, critically evaluate the sources, and disseminate such information. The study by Dennis Ocholla (2014) reveals that online information resources have not been used extensively by undergraduate students in Nigeria. In a similar study conducted in a typical federal university in Nigeria, Daramola (2016) found out that male students visited the e-resources more than the female students. Furthermore, anecdotal evidence and the researchers' personal experiences have revealed that majority of the undergraduate students made little or no use of electronic resources provided by the university library despite the high cost of these resources. Generally, the attitude of the students seemed lukewarm. It does appear that the students are having challenges with the use of online information resources. This means that any policy or practical interventions that aim to address this situation ought to be well informed by drawing from empirical evidence.

The Information Search Process model describes the various experiences that the information seeker goes through from the beginning until the end. Kuhlthau (2010) describes the experiences as a series of thoughts, actions and feelings accompanying the information seeker. Though the process is mitigated by feelings, thoughts, and actions, it is thought to apply equally to individual and group work and has been

tailored to different disciplines requiring different epistemologies and methodologies (Hayden et al., 2018).

Israel R. Odede (2014) researched and identified the feelings students are likely to experience along with strategies as well as their thoughts and actions that can lead them through a productive search. The model describes the information search process from the perspective of the user and is derived from an intensive study of a group of high school seniors (Israel R., 2014). In her research, Odede (2014) also developed a principle of uncertainty, where uncertainty due to lack of skills or limited construction, initiates the process of information seeking.

Information searching is fairly well documented, but the extent to which students are able to search in electronic environment is not clearly known (Omar, 2019). Electronic information searching to a large extent relies on internet which is computer based worldwide information network. The internet can connect thousands of computers and through the World Wide Web (WWW) allows varies users to navigate through. Through it, users can share various sources of information from different parts of the world at a time.

As in the other fields, Internet has also brought new but positive changes in library and information science (LIS) field and enhanced the quality of work. To access online information resources, a typical conventional expertise is required which sometimes emerge as a hurdle to access and use the digital resources (Kinley, Tjondronegoro & Partridge, 2010). Therefore, the information seekers should know

about the searching techniques to use so as to get their required data on the web. Students studying in different academic levels have different searching skills which are reflected on significant positive impact on their ability to use online library resources for their research and academic activities (Choi, 2015).

Students can get more advantages if they have good searching skills. Students from all disciplines can also get more benefits if they are expert in using searching filters. Through literature, it is also revealed that the age factor also plays an important role to learn or use the searching techniques while accessing the required information and knowledge (Chea, 2011).

Dresang (2011) has urged that students studying in colleges and universities have better searching skills as compared to the students studying in schools. Dinet, Favart and Passerault (2014) have noted that students who used searching operators could easily access electronic resources as compared to those students who did not use searching filters while accessing digital information. Callinan (2019) recommended that students should be literate about the searching techniques and the use of operators. Essentially, electronic resources play a crucial role to all higher institutions as they have dramatics impact on higher education as more university offer courses and services online (Huck, 2012). Brenner, J. (2013) asserts that courses run by the university are being revised to enable students to learn the use of new technological tools to browse, search and retrieve information.

Crawford, (2015) has founded out that undergraduate business students of two

British universities had poor information searching skills. Although the students overrated themselves on a self-rating scale but only one-fourth of them performed well in the "test" part. Korobili and Tilikidou (2005) surveyed the students of marketing department in Greece. The students perceived their skills in online information searching as satisfactory.

Mehrad and Rahimi (2012) conducted a study on "searching skills of management science students of Sheraz University". They selected the "seven most frequently used online searching techniques, i.e., Boolean Searching, Phrase Searching, Proximity Searching, Field Searching, Truncation, Time Limitation and Synonyms, and suitable keywords to conduct the survey". The study noted that the students of M.Phil and PhD level had equal searching expertise but the authors recommended that they should learn advanced searching skills to access their required information without delay.

Students must show a tendency for lifelong learning by acquiring information literacy skills to contend with the rapid information growth in the information society and advance themselves. This is because students' efforts to complement their work with electronic information resources may be limited due to lack of information literacy skills since there is a positive correlation between both variables(Ekenna & Iyabo, 2013). A study by Oyeniyi (2013) on information retrieval skills and use of electronic resources among information professionals in South-Western Nigeria revealed a significant positive correlation between the information professionals' retrieval skills and their utilization of online resources.

According to Singh et al. (2011), information literacy skills are basic in selecting and retrieving pertinent and current information in an online environment. Information literacy skills acquisition is absolutely essential in using online resources since most information is available in electronic format that could exclusively be used when students are information literate. These skills are compulsory due to the proliferation of electronic information resources as well as the numerous mediums of access and the different formats in which information is available. Muhia (2015) noted that "abundance of information and technology will not in itself create more informed citizens without a complimentary understanding of and capacity to use information effectively". Therefore, information literacy skills will enable the students to make impressive and dynamic use of digital information.

2.2.1 Source of Information Searching skills

Being able to search for useful information that is relevant to your studies is one of the key skills that will improve your marks, as well as the overall quality of your study experience.

There are four different components to search skills: example knowing where to find information - the key texts in your area, the journals, primary sources, etc., and how to get hold of them. Knowing what information you need - understanding your topic and knowing the key concepts you should research, Knowing how to search the sources - using keywords etc and Recording your searches, so that you have an 'audit trail'.

2.2.2 Importance of Information surching Skills

Knowledge is power as the saying goes, this is very true because it is what we know

that determines what we can do or cannot do. What we know determines whether we succeed or fail. The knowledge we possess can make or mar our destinies. This is why we make deliberate efforts to learn and know whatever there is to know. We learn and become knowledgeable only if we possess the necessary information literacy skills that enable us acquire information when there is a need for it, search, locate and gather quality information. Information literacy skills are necessary for our daily living, a successful career life, as well as a successful educational pursuit. With information literacy skills, acquiring information on any issue of life become stress less. There is no subject under the sun that cannot be learnt once an individual possess these skills. Knowledge therefore becomes power when we are able to acquire information and effectively utilize it to meet our needs. According to Rockman, Ilene F (2003) information literacy is no longer just a library issue. It is the critical campus wide issue for the twenty-first century. It is of utmost importance to all stakeholders in the education sector, including administrators, faculty, librarians, media and information technologists, assessment coordinators, faculty development directors, service learning specialists, student affairs personnel, and career development professionals. The knowledge of information literacy is even more critical in this age where knowledge is ever increasing. The advent of Information and Communication Technologies evolved an increasingly complex world of abundance of information sources e.g. —print, electronic, image, spatial, sound, visual, and numeric. The issue is no longer one of not having enough information; it is just the opposite—too much information, in various formats and not all of equal value (Rockman, 2003). The present information environment holds many pitfalls for college and university students that seem to multiply geometrically

(Roth, 1999). The challenge of educators according to Boyer (1997) is to help students make sense of a world described as information overload. Boyer commission on educating undergraduates in research noted that "undergraduate education should be designed as a continuum that prepares students' for continued learning and professional work through development of their talents to formulate questions and seek answers" (Boyer Commission on Educating Undergraduates in Research University, 2001). A sound foundation in information literacy knowledge helps students master the skill of searching, finding and effectively utilize information for purposes of school term papers, project and research articles.

Çevik, Y.D. (2015) has noted that training improves students' searching skills. He explored in his research study that the students who availed some training programs or were involved in any such activity had better searching skills than the students who did not attend information literacy training programs. According to Lawal (2012), each of the stages of the Information Search Process model indicates a progressive development that would lead the user in attaining a sense of ownership in the area of expertise which constitutes an important component of information literacy and lifelong learning.

Çevik, (2015) found out that the impacts of the training on "online searching self-efficacy" and conducted pre and post-training tests. Muhia (2015:20) noted that "abundance of information and technology will not in itself create more informed citizens without a complimentary understanding of capacity to use information effectively". Therefore, information literacy skills will enable the students to make

impressive and dynamic use of digital information. According to Gui (2007), information literacy skills incorporate navigation skills, selection and evaluation skills as well as the ability to use information. These skills enable individuals to handle the changing contents of computer and information resources and knowing where and how to look for the resources.

2.2.3 Students' Information Search Skills

Students' lack of information search skills is one of the contributory factors to the need to expand library instruction. Oberman (1991) addressed this in her study on American students, whereby their inability to match subject relevance with appropriate sources of information and their unfamiliarity with the online environment led to an information excess that caused considerable amount of anxiety. Candy (2002) links information anxiety with the impact of information explosion, or data smog, which Bruce (2002) associates with poor information literacy competences, as learners cannot find the information they need thereby rely on others for its retrieval. Lack of information literacy skills is a global phenomenon. Hepworth's study on undergraduates in Singapore found out that students were unable to formulate a search effectively as they tended to make a very literal interpretation of the question and started looking for materials that mention those words listed in the question (Hepworth, 1999).

2.2.4 Process of Information Search skills

According to Suson (2017) information search process presents a holistic view of information seeking from the user's perspective in six stages: task initiation, selection, exploration, focus formulation, collection and presentation. The six stage

model of the information search process incorporates three realms of experience: the affective (feelings) the cognitive (thoughts) and the physical (actions) common to each stage (1). The information search process reveals information seeking as a process of construction influenced by Kelly's personal construct theory (2) with information increasing uncertainty in the early stages of the information search process (Suson Every, 2017).

Wade, D. F (2009) summarizes the findings of these studies of the user's perspective of the ISP, the affective symptoms of uncertainty, confusion and frustration prevalent in the early stages are associated with vague, unclear thoughts about a topic or a problem. As knowledge states shifted to clearer, more focused thoughts a corresponding shift was noted in feelings of increased confidence and certainty. Affective aspects, such as uncertainty and confusion can influence relevance judgments as much as cognitive aspects, such as personal knowledge and information content.

2.2.5 Searching for Information on the Internet

Gecer, (2014) has noted that Internet is the important sources of information in an electronic environment which is based on interlinked computer networks. Aina, (2004) referred to Internet as a network of networks which millions of computers worldwide are interconnected and the information sources in each computer are made available to all users who have access the Internet. Through the Internet student can access bibliographic and full-text databases, library catalogues on OPAC, electronic mail, newspapers, magazines, electronic books etc. Any sources of

information on the internet can be found through search tools. Seferoğlu, (2017) indicated that to search the internet one need to use various search engines. He described search engines as the specialized programs that assist users in locating information on the web and the internet.

According to them, ‘to find information, the search goes to the search service`s web site and use their search engine. Most search engines provide two different search approaches which are keyword and directory search (Mwangi, 2009). In keyword search, the searcher enters a keyword or phrase reflecting the information one wants. The search engine compares the enter against its database and returns a list of hits, sites that contain the keywords. Each hit includes a hyperlink to the referenced web page along with a brief discussion of the information contained at that location (Mwatto and Bwabo, 2012).

Mwatto and Bwabo (2012) in directory search has noted that most search engines also provide a directory or list of categories or topics such as; Arts and Humanities, Business and Economics, Computers and Internet. In directory search, the searcher selects a category that fits the information that the search wants. From such category, another list of subtopics related to the topic selected appears. The searcher selects the subtopic that best relate to the topic concerned and another subtopic appears. The searcher continues to narrow the search in this manner until a list of Web sites appears. Along with the advances in web technologies, the teaching-learning activities that are conducted on the Internet also rapidly have diversified.

As the Internet becomes a significant source for the teaching-learning process,

learners' Internet skills are expanding to include information literacy skills such as; access to information, acquisition, evaluation and utilization (Kabakçı, Fırat, İzmirli & Kuzu, 2010). The search engines have different strengths for different area in the Internet. Therefore, Jacob (2004) suggested that, it is important for the user to choose the most relevant search engine to suit his area of interest.

The most widely used search engines include; Alta Vista, Northern light, Hotbot, Goooole, Infoseek, Lycos, Excite, Webcrawler, Teamo and Yahoo. A survey of use of the Internet facility at the Guru Nanak Dev University, Amritsar, was conducted by Kaur, 2012). This survey indicated that all respondents used the Internet to send e-mail and 82% for Web browsing. More than 60% of the respondents used the Internet for primary information, 38% for secondary and only 15% used it for consulting Online Public Access Catalogues (OPACs).

The California Digital Library created the eScholarship Repository (Mwatto and Bwabo, 2012). This entailed "hiding" some of the more sophisticated features of the existing journal publishing system, while adding features such as compliance with the OAI-PMH harvesting protocol. EPrint is a software that is used to digitize the information material. It was developed in 2000 as a direct outcome of Santa Fe meeting in 2009, where there was the first meeting of the university initiative-Give initiatives since 2013 onwards. It is commonly used as an institutional repository. It was developed at the University of Southampton School of Electronics and Computer Science Open source under GPL license (Wario and Khalfan 2015).

2.2.6 Meta Engines

Meta engines are search agents that help in scanning the contents of some sites by gathering information from several search engines. These agents include; Dog pile and Meta Crawler, Ixquick, mamma, AsskJeeves, Profusion, Search and Vivisimo. O`Leary and O`Leary, (2003:211) have commented that one way to research a topic is to visit a web site for several individual search engines. During search activity, the users have to use many Meta search engines so as to get many hits. After reviewing the list, there are the possibilities of obtaining relevant documents. However, O`Leary, and O`Leary, (2003) argued that this process can be quite time consuming and duplicate responses from different search engines can be obtained. Spink and Jansen (2014) discussed the changes in Web search trends from 2010 to 2013 that explored how people search the Web. They pointed out some patterns and trends in general Web searching.

2.2.7 Specializes search Engines

Specialized search engines focus on subject-specific Web sites. They can potentially save time by narrowing the search. Khalfan (2015) pointed out three types of organization that produce specialized directories which are; government bodies, professional societies and commercial organizations. Essentially, specialized search engines provide vital sources in the information on the range of databases which cover from relatively narrow interests to interdisciplinary concerns (Khalfan, 2015).

According to Fabunm (2014), the manual system of searching for information and materials in the traditional library does not permit multiple use of the same material

by different library users unlike the online library services. It is inefficient and time consuming, hence the need to exploit the advantages of the digital library which enables provision of online library services. However, there are a lot of challenges facing the setting of a digital library or conversion to digital status.

2.2.8 Formulation of Search Strategy

The term search strategy has been used in different ways in the information retrieval literature. Kumar (2002) referred the term search strategy as a command put into a search system. Also he referred it to search formulation. Kuzu, E.B. (2010) said that search strategy as a total set of decisions and actions taken throughout the conduct of a search. She further explained the aims of the search strategy as to match the desired number of relevant records, to avoid matching irrelevant records, to avoid set sizes which are far too large and avoid set sizes which are too small or even empty. The central tasks of the search strategy are to broaden or to narrow searches. These can be achieved by changing the search terms and combining them in different ways using the retrieval devices.

Taylor, (1999) suggested that searchers of the information should know how to develop search strategy before actually searching. Therefore, a search strategy is not mostly concerned with the final search statement which results in the desired document set. It is also concerned with the way in which subsequent search statements are input to develop the searcher` knowledge of the number of the postings under various terms and the appropriateness of specific search terms in the context of the search and the database.

Idoniboye-Obu, T. (2013) has suggested steps to be taken in the formulation of search strategies as follows:-

i. To analyze the query or question. For this purpose one can use facet analysis to determine the specific subject and ascertain all the facts and isolates for each of the different facets of the specific subject; and
ii. Classify the question. Consider various aspects of the question and make corresponding hypothesis as to the materials which are likely to contain information and to list all the likely of information in the order of priority.

He added that the preparation of search strategy comprises several points including:

i. To identify concepts;
ii. To ascertain index terms, synonyms of the concept;
iii. To identify proper database;
iv. To study indexing feature of the database; and
v. To formulate query.

Chea, S. (2011) has argued that the search strategy would always vary depending on the nature of the inquiry itself and as the query becomes narrowed the strategy and type of information sought will vary too. Therefore, searchers of information should know how to develop search strategy before actually searching.

2.2.9 Information Retrieval System and Retrieval Process

Information retrieval system is the human artifact in which technical, semantic, and pragmatic communication are important components in information searching

activity. Using an information system as filter, users search collection of data, either directly or through an intermediary. The emergence of the internet has significantly influenced almost every field of life. This development has opened new ways to deal with the business and work routine. As in the other fields, internet has also brought new but positive changes in LIS field and enhanced the quality of work.

To access online information resources, a typical/ conventional expertise is required which sometimes emerge as a hurdle/menace/nuisance to access and use the digital resources (Kinley, Tjondronegoro & Partridge, 2010), Mehrad and Rahimi (2012) conducted a study on "searching skills of management science students of Sheraz University". They selected the "seven most frequently used online searching techniques, i.e., Boolean Searching, Phrase Searching, Proximity Searching, Field Searching, Truncation, Time Limitation and Synonyms, and suitable keywords to conduct the survey". The study found out that the students of master of philosophy (MPhil) and doctoral level had equal searching expertise but the authors recommended that they should learn advanced searching skills to access their required information without delay.

To retrieve information in response to a query, a search must be made in a story of information. Information and query are expressed in the form of texts, and the search operation consists of matching a query text against a set of information texts. Idoniboye-Obu, T. (2013) argues that the information foods can only be mastered with appropriate tools that are capable of matching user needs with appropriate tools that are capable of marching user needs with the available information. The more

correct approach to information searching would be information storage and retrieval because to retrieve information depends upon how and in what manner the information was stored in the computer system.

In the whole operation retrieval, four phases can be identified: word retrieval in which the words are identified that will adequately describe the information sought; reference retrieval in which references are identified that are probably pertinent to the inquiry; document retrieval in which the actual documents are located; and data retrieval in which the sought information is extracted from the documents. The process of retrieval takes place repeatedly in every search for information. Pandey (2000) proposed that the whole process can be analyzed into seven stages as follows. A decision is taken as to what kinds of key will be used to identify documents, appropriate keys so selected may be standardized and coded, appropriate keys are derived from or assigned to each document and the user profile is compared with document profile and for some specified degree of matching, appropriate document reference or location are obtained.

However, Idoniboye-Obu, T. (2013) has noted three limiting factors imposed on the information storage and retrieval techniques which are the thinking and verbiage? of the original author; the indexer who decides what details will be used in the storage; and the search who must understand the manner of thinking and understanding of the author and the indexer. Information storage and retrieval involve indexing and storing vast amount of data within the computer system and providing the method whereby all or any part of the data can be recorded quickly in its original form.

Heaps (2000) provided the first step in the retrieval process as the formulation of a question that is both simple enough for initiation of a computer search and sufficiently comprehensive to describe adequate the interest of the user. The question formulation stage includes the decision as to which particular databases should be searched. A research from database produces a list of document items that satisfy the question logic. The user may then decide whether they are relevant by examining the output item only or by reference to the complete documents.

Furthermore, Heaps (2000:35) pointed out that after initial question formulation, it would be advisable to consult the thesaurus in order to expand the question by inclusion of same related terms. Meanwhile, after research has been performed it may be decided to broaden or to narrow, the question in a manner determined by further examination of a suitable thesaurus. The complete retrieval process may be summarized as follows:

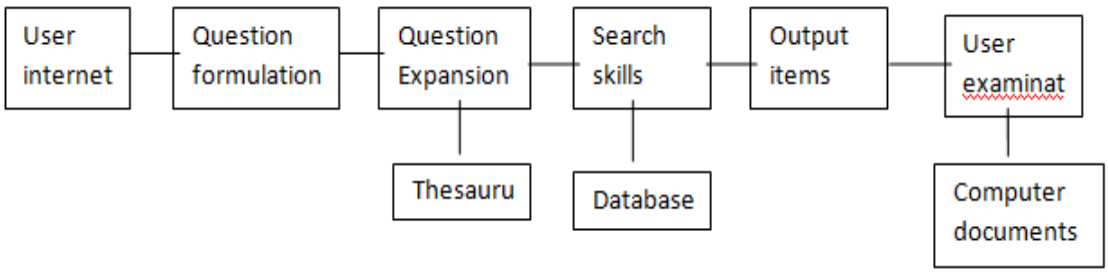


Figure 2.1: Complete Retrieval Process

Source: Heaps (2000)

2.2.10 Factors that Affect Electronic Information Search Process

Information searching skills is dependent on interactions among the information searching factors such as; domain, setting, user characteristics and experience,

system content and interface. Mazman, S.G. (2013) has pointed out the different factors which affect the search process, including:

Generally, the higher order of interactions of all the information searching factors, influence the specific searching tactics along with the advances in web technologies, the teaching-learning activities that are conducted on the Internet also rapidly diversify. As the Internet becomes a significant source for the teaching-learning process, learners' Internet skills are expanding to include information literacy skills such as access to information, acquisition, evaluation and utilization (Kabakçı, Fırat, İzmirli & Kuzu, 2010). When the magnitude and diversity of the information available on the Internet are considered, since issues such as the value, reliability, impartiality, currency and applicability of the presented or acquired information constitute a question mark for the individuals, it is necessary to evaluate the web sites with a critical approach (Geçer, 2014).

Cognitive strategies are significant for easy and rapid access of individuals to accurate and reliable information, and conducting various cognitive processes such as; analysis, evaluation and decision-making during the process of access to information. Especially, it is important for the students to decide on the adequacy, reliability and relative quality of the acquired information, as well as the search and access of information on the Internet that they use as a primary source of information for their homework, projects and presentations. Du and Evans (2011) investigated how academic users search for information for their real-life research tasks with 11 PhD students. Interaction with multiple search systems, exploration of popular search engines, use of basic search function, construction of multiple search queries, multi-

tasking reformulation, parallel reformulation, and recurrent reformulation were the searching strategies discovered as a result of the study. In fact, in a study conducted with high school students, it was concluded that the students' awareness on the authenticity and reliability of the resources on the internet was inadequate (Esgin, Baba, Aytaç & Turan, 2011). Hargittai (2012) studied the search for health information on the Internet via personal observations and interviews with a diverse group of 210 young adults about their experiences with looking for emergency contraception (EC) information on the Web. Results showed that one third of participants were unable to find any relevant information about EC and majority of the group could not identify the most efficient way to obtain EC in a time of need. It was stated that several individuals did not have necessary skills to navigate online content well with policy implications for educating people about informed and efficient Internet uses.

In parallel with the development and penetration of the Internet, it became increasingly difficult for users to cope with this medium, which is created with the mass of information uploaded, edited and shared all over the world. A user who wants to access information on a certain subject often is faced with a lot of irrelevant, false and unreliable information on the search topic (Fırat & Kurt, 2015). This led to the birth of the concept of information pollution on the Internet, which was called "infollution" by Power (2015) (According to Sultana, Ayesha, 2016).

The term information seeking behavior involves a set of actions like information needs, seek information, evaluate and select information and finally use this

information. Information seeking is the process engaged in by humans to change their state of knowledge. It is a high-level cognitive process that is part learning or problem solving. To seek information implies the need to change the state of one's knowledge. Because the new information formats of information sources and new information tools, users are expected to acquire new knowledge and skills in information searching (Kaushik, 2011).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodologies which were used to carry out the study. According to Creswell, (2012) research methodology refers to a way which systematically solves the research problem. Research methodology may also be understood as a science of studying how research is done scientifically.

3.2 Research Design

Cooper (2012) has defined a research design as an art that constitutes the blueprint for the collection, measurement and analysis of data. This study useda case study design. Research design was selected because it enables one to examine the data within specific context (Zainab, 2017).

3.3 Areas of the Study

Study areas are geographic boundaries created in Business Analyst used to define the extent of your analysis. The study was a conducted at the State University of Zanzibar which has the following campuses; School of Health and Medical Science, School of Financial Administration, School of Kiswahili and foreign languages (Zanzibar branch), School of Tourism, Administration and School of Agriculture and School of Education.

3.4 The Study Population

According to Kadi, & Khelfaoui, (2020) population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate. The

total population in this study was 1250 Among them 550 (47%) were males and 800 (53%) were females (SUZA, 2019). Therefore, the targeted population of this study was the community members of the State University of Zanzibar, specifically students and librarians.

Table 3.1: Number of population

S/N	Respondent	Female	Male	Total	Percent
	Director	0	1	1	0.1**%**
	Librarians in Head office	2	4	6	1.4**%**
	Students	1031	212	1243	98.5**%**
	Total	**1033**	**217**	**1250**	**100%**

3.5 Sample and Sampling Procedure

Sample size according to Askar (2009), can be defined as a group chosen from a larger population with the aim of yielding information about this population as a whole. Among 1250 population of the study, researcher used 145 respondents for questionnaires and five respondents (6) for the interviews which altogether formed 150 respondents as a sample size from all population categories. Therefore, the researcher distributed 145 questionnaires to sstudent and 6 librarian were interviewed including male and female as the research respondents; these respondents was sufficient for representation of the other remaining populations and will be a given measurable and justifiable results.

Sample size was determined by simplified formular from Daniel (1999) as shown below:-

$$n = \frac{1.96^2 \times O^2}{E^2}$$

n = Sample size

Ơ = Standard deviation

1.96^2 = confidence 95%

Ơ = 25

E = 4

$$n = \frac{3.84 \times 25^2}{16} = \frac{3.84 \times 625}{4^2} = \frac{3.84 \times 625}{16} = 3.84 \times 39 = 150$$

3.6 Data Collection Methods

Oso et al. (2011) noted that methods of data collection refers to the methods to be used for collecting data and how those tools was developed. Data can be obtained from primary or secondary sources. Primary data refers to information obtained firsthand by the researcher on the variables of interest for the specific purpose of the study, while secondary data refers to information gathered from sources already existing (Sekaran 2006: 219). In this study, both primary and secondary data were collected. Books, journals, government reports, dissertations and online sources were used to collect secondary data for this study. Questionnaires and interviews were used to collect primary data from the sample population.

3.6.1 Data Collection Instruments

It is described as a device used to collect the data. The type of instrument used by the researcher depends on the data collection method selected, (Kothari, 1990). For the sake of this study, the researcher used questionnaire guide to collect data.

3.6.2 Interview Guide

Interview conducted to collect qualitative information such as opinions and views of the study. Besides questionnaires, the researcher used interview method to three respondents like supervisor of the office and staff for the purpose of collecting data seeking clarifications on some data being collected. As Kvale and Brinkmann, (2009) views interview is the more powerful in eliciting narrative data that allow researcher to narrate people views in greater depth. In interviewing, the Leading Questions Checklist were re-designed to direct researcher and enable the respondents to react significantly and come up with the answers on interview questions. The advantages of using interview is to get quick gathering information, the researcher had the knowledge whether the respondents understood the questions and the method restricted to educate class alone.

3.6.3 Questionnaire Guide

Questionnaires with open ended and closed questions was used. Questionnaires have an advantage of collecting information from many respondents where the respondents are to offer information, especially because of anonymity (Kothari, 2004). Questionnaires were distributed to students from the State University of Zanzibar of the main campus.

3.7 Data Quality Control

According to Kothari (1990) it is important to pre-test a study tool in order to identify questions which might not yield useful answer and collect them accordingly. The data quality control was used in order to ensure correctness and accuracy of information obtained from the respondents. The pilot of this study is School of

Health and alied Science Zanzibar.

3.8 Data Processing and Analysis

Bogdan and Bicklein (1992) has defined data analysis as working with data, organizing them, searching for pattern to identify what is important and what should be learned as well as deciding on what the researcher will report. According to Shamoo and Resnik (2003), in analyzing data various analytic procedures provide a way of drawing inductive inferences from data and distinguishing the phenomenon of interest from statistical fluctuations present in the data. Data analysis and interpretation followed data collection. Literature suggests that use of these two types of data analysis is necessary in order to remove each method's shortcomings in the research field (Anderson, 2000).

3.8 Reliability and Validity of Data

3.8.1 Reliability

Reliability of data collection tools were ascertained by using test re-test method (Tromp and Kombo, 2014). Test re-test reliability method is one of the simplest ways of testing the reliability of an instrument over time (Tromp and Kombo, 2014). To actualize use this, test a sample of ten respondents was subjected to the questionnaire and after two weeks to the same questionnaire. Relationship of the answers given on the two questionnaires will be determined.

3.8.2 Validity

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to performed (Wario and Khalfan, 2015). A pilot study was used and data analyzed to assess the validity of an instrument. In the

pilot study 10 questionnaires were distributed to potential respondents before the actual survey, and then the answers were scrutinized to make sure that all questions were valid and worthy to be included in the survey. In assuring validity of the instruments, the researcher cross checked external validity and content validity.

External Validity*:* This is the extent to which the results of a study can be *generalized* from a sample to a population (Wario and Khalfan, 2015). An instrument that is externally valid helps obtain population general ability, or the degree to which a sample represents the population.

Content Validity: This refers to the appropriateness of the content of an instrument. In other words, do the measures (questions, observation logs) accurately assess what you want to know (Wario and Khalfan, 2015). This was achieved by taking representative questions from each of the research objectives and evaluating them against the desired outcomes.

CHAPTER FOUR

DATA PRESSENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter presents, analyses and interpreted data which were given by the respondents. The chapter begins with the presentation of the demographical information of the respondents.

4.1.1 Questionnaire Return Rate

A questionnaire in this study was considered as the major tool for data collection. The researcher prepared questionnaires and sent them to respondents through physical visiting of the staffs in their office by selecting the appropriate members intended to be reached. The total of 145 questionnaires were disytributedto 145 respondents. Also, three staffs that were interviewed responded positively to interview questions.

4.2. Demographic Information

Demographic data in the study findings was considered as important aspect which enabled the researcher to get the preliminary information of the respondents. The demographic information of respondents considered the aspects of age, gender, marital status, working experience and level of education of respondents. In this study therefore, researcher obtained the background information of respondents based on age, gender and education so as to get information based on background of the respondents.

Table 2.1: Age of Respondents

Age	Frequency	Percent
18-25	22	15.1
26-35	87	60.0
36 and above	36	24.8
Total	**145**	**100.0**

Source: Field data, 2021

4.2.1 Age of Respondents

Researcher sought to know the age of respondents as the significant aspect of demographic data of participants. From the demographic data, as seen in Table 4.1, the findings disclosed that out of 145 participants, 22 (15.1%) of students were aged between 18 and 25, while 87 (60.0%) of total respondents had the age between 26 to 35 and 36 (24.8%) had more than 36 years.

From the findings, the data demonstrate that more than half of respondents had the age of young active students. This may be due to the fact that the new student's posts which were empty had been filled. So the students who were aged between 18 and 25, 26 and 35 years got more chance to be trained in the other educational institution like IPA ICPS etc.

4.2.2. Gender of Participants

The population under this study was heterogeneous in nature. It comprised of both female and male respondents with varied education, age and occupational background. With regard to the gender of respondents 89 (61.3%) were females and 56 (38.6%) were males (Table 4.2).

Table 4. 2: Gender of Participants

Gender	Frequency	Percent
Male	56	38.6
Female	89	61.3
Total	**145**	**100.0**

Source: Field data, 2021

Data in Table 4.2, shows that, 56 (38.6%) of participants were male and 89 (61.3%) were female. The disparity of gender between male and female in this study may be due to fact that, female respondents were interested more with study like teacher and extension special cause perhaps due to devolution of power from main cumpus to SUZA branches. School of educational and School of agricultural were devolved, (SUZA Trsnsformation Report, 2019)

4.2.3. Education Qualifications of Participants

This part describes Education Qualifications of Participants which includes Below F IV, Certificate level, Diploma, Degree, and Post graduate. The total number of all respondents was 145 as indicated in Table 4.3.

Table 4. 3: Educational Qualification of Respondents (N=145)

Education	Frequency	Percent
Below F VI	2	1.4
Certificate level	8	5.5
Diploma	63	43.4
Degree	44	30.3
Post graduate	28	19.3
Total	**145**	**100.0**

Source: Field data, 2021

Respondents were supposed to disclose their highest level of education. The educational level identified were below FVI, certificate level, diploma, degree and post graduate level. The study indicated that, 2 (1.4%) of total respondents had the education below form VI, 8 (5.5%) had certifacte level, 63 (43.4%) had diploma level, 44 (30.3%) had degree and 28 (19.3%) had post graduate level of education as shown in Table 4.3.

The data indicated that, about half of the total respondents had the education level of degree and diploma 107 (73.7%) which implied that majority of respondents had moderate to learned education required. However, few respondents possessed post graduate level of education. So, much awareness was needed on capacity building of students so as to increase performance level of the SUZA University.

4.2.4. Participants Students learning experience

The participants students learning experience is very important to know the experience for the student to learning in suza as shown in Table 4.4

Table 4.4: Students Learning Experience (N=145)

Years	**Frequency**	**Percent**
Less than 1 Year	33	22.7
1	29	20.0
2	27	18.6
3	24	16.5
4	32	22.0
Total	**145**	**100.0**

Source: Field data, 2020

Researcher also intended to understand the participant's experience. The findings indicated that 33 (22.7%) had less than 1 year of experience, 29 (20.0%) had learning experience between first year, 27 (18.6%) aged between 2 years while 24 (16.5%) had the age between 3 and 32 (22.0%) had 4 years.

From Table 4.4, the data indicated that, high percentage of participants had high experience. The high learning experience of Students was probably attributed by the limited respondents' opportunities established in the SUZA library.

Figure 4.1 students learning experience

Source: Field Data 2021

4.3 Availability of the Electronic Information Sources and Services Available to the Surveyed Libraries

This objective was identified through the respondents with the intentions of exploring the information searching skills pertaining to discover the tools used in searching skills within the SUZA library. Under this research objective researcher measured the variables showing electronic information souces, method used among the students themselves; between students and librarians and best attained tools for students' information. Descriptive statistics were used to analyze the findings.

Table 4.5: Electronic Resources and Services Available(N=145)

Item	Frequency	Percent
Library portal	62	42.7
E- reference	50	34.5
E- newspaper	10	6.9
E-document	23	15.9
Total	**145**	**100.0**

Source: Field Data, 2021

The question was focused to recognize the types of electronic information resources skills for searcing them as applied within the SUZA library. The students were required to types of electronic information resources skills and services, the best types among the electronic resources type like Library portal, E- reference, E-Newspapers and E- document**.** The findings indicated that, 62 (42.7%) admitted library portal, 50 (34.5%) admitted electronic reference, 10 (6.9%) electronic newspaper, and 23 (15.9%) experience electronic document as the electronic information types with the familiar used in the library as shown in Table 4.5.

From the data findings as shown in Table 4.5, respondents used all common traditional types of information resources. However, library portal and electronic reference types were mostly used. This data justifies that with presence of scattered students station as in the SUZA library, the library portal and electronic documents were mostly preferable than electronic newspaper and electronic document.

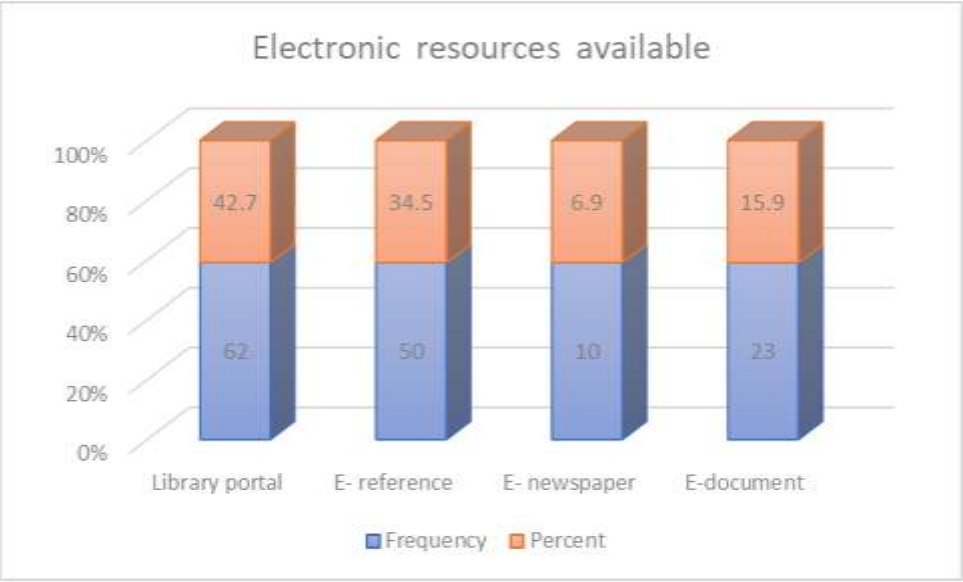
The data from questionnaires were also supplemented by the interviews responses as members' responses that they used varieties of techniques for electronic resources in

the libraty like; e- book, online catalogue and electronic jornal. Electronic library system is cross cutting issues in the SUZA who as respondents declared as follows:

> *"To our experience of working here in the SUZA, we most likely use a combination types to electronic resources, skills ande electronic services Each other services in electronic book, e- newspaper, online catalogue however, when the information were supposed to be distributed outside of the library for students reading apart from the SUZA, we always use methods, electronic books even thoug to some extent we use smart phone for sharing books in the form of group sharing"*

These findings have relevance to questionnaires responses whereas, the common types of electronic resources and skills appeared to be most likely used in the library and revealed the interpretation which justify the extent and assess the information searching skills of university students in an electronic environment. The findings therefore was low level of ICT tools for information searching among the students in the academic institution.

Figure 4.2: Types of Electronic Resources



Source: Field Data 2021

4.3.1 What Searchers Search From the Sources they Visit

The students in this question were requested to identify the most preferable techiniques used for information searching internally among students and their librarian of department or supervisors as shown in the Table 4.6.

Table 4. 6: Skills Used by Students for Searching Information (N=145)

Item	Frequency	Percent
Highly satisfied	80	55.1
Moderate satisfied	46	31.7
Less satisfied	16	11.0
Not satisfied	3	2.0
Total	**145**	**100.0**

Source: Field Data, 2021

Researcher also needed to understand the common style of acceses used by students in the library to inform their librarian in their daily routine work. The respondents disclosed that, 80 (55.1%) used highly satisfied; 46 (31.7%) moderately satisfied, 16 (11.0%) used Less satisfied; and only 3 (2.0%) admitted to not satisfied regarding type of searching information which used to interact with their librarian as shown in Table 4.6.

This finding again, as appeared in the previous question justified that, majority of students within the University prefer to high satisfied information search and moderet satisfied rather than less satified and not satisfied . These findings implied that, respondent were not familiar with the application of modern skills of searching information. This situation perhaps existed because of poor network installed internally within the Library of the State University and distance of searching station

among respondent in the University. The same question was supplemented with librarian supervisors of the University who they said that,

> "Our *university, information searching skilss flow internally through different ways For instance, information related to searching was distributed from the students supervisors like us to the librarian in each University department. This information were distributed in the form of directives whereas, for the important message librarians within the University were gathered in the learning and face to face inform were held. The librarian who worked in the station far from head office were mostly re-called through telephone"*

The findings gave the interpretation that, high satify skills and telephone methods had a great use in the university for the directives, information and information sharing among the student and their lecture. The interviews findings implied that, librarian and lecture interacted physically when the working guidelines and instruction were given and in the most cases when students had limited searching skills and learning experience, frequently interact using face to face skills. The findings again, concured with the study by Radhe (2011) who argued that information searching skills techniques constitutes traditional methods of information searching skills within the electronic environment. Meanwhile, the findings concurred with the study of Muhajir & Hawa (2017). The co- authors assessed the effectiveness of information skillss, channel in University and college in Zanzibar. The findings of their study however, indicated that, politechnique and vocationary trainning institutes success in the information sharing need to adopt the combination of information searching skills tools. Even though, the reliability to share the infromation succesfully depends on the size of the University, to small college face to face and telephone channels were used frequently and achieve positive result of college goals.

Table 4. 7: Searching Skills Methods in Electronic Environment (N=145)

Item		Frequency	Percent
	Highly satisfied	102	70.3
	Moderate satisfied	27	18.6
	Less satisfied	0	0%
	Not satisfied	16	11.0
	Total	**145**	**100.0**

Source: Field data, 2021

4.4 Examination of the extent to which students were able to Search Information in Electronic Environment

4.4.1 Satisfied with the results obtained from search engine

Researcher also needed to understand the different methods of information searching skills used in electronic environment in the SUZA University. Respondents disclosed that, 102 (70.3%) were highly satisfied with searching information; 27 (18.6%) adapted moderate satisfied; 16 (10.7%) admitted email and none of respondent admitted that not satisfied as their type of searching information skills among peers. Again, the findings revealed that, majority of students within the University preferred to use face to face searching information and telephone when they were in the assignment rather than internal memo and email address.

This situation perhaps existsed because face to face information searching is simple and give chance to clarify the issue in the simplest way rather than internal memo and intranet. However, in the modern science and technology, local area network is more preferable. The findings of the study was consistency to Omar (2011) who

evaluated the information searching skills tools frequently used for information searching skills process in Central Public Sector Enterprises in Pemba.

4.4.2 The Extent to Which Students Were Able to Search Information in Electronic Environment

Study sought to know from the respondents the electronic resources and the, search engine used.

Table 4.8 : Adequate to Search Information (N=145)

Response	Frequency	Percent
Adequate	12	9.6
Not Adequate	133	93.4
Total	**145**	**100.0**

Source: Field data, 2021

4.4.3 The Electronic Information Sources and Services Available to the Surveyed Libraries

The study observed and analysed the information searching skills provided in electronic environment in order to identify whether or not the university library structure; the number of students who accessed and used electronic information; the frequency of students using university library, and their satisfaction on the library services delivered. Findings on each item tested were presented below.

4.4.4. University Library

A University library is an important education facility that each University should establish in order to enable students, teachers and any other community member to access and use the services provided including borrowing books and other learning

materials. In order to establish the library situation, the respondents were required to provide their responses on whether or not their university had libraries. The findings of the study showed that 93 per cent of the students from the state University agreed that their University had no electronic library infrastructure. During field visit, it was observed that the University did not have standard electronic libraries according to the University electronic environment and electronic resources available.

Mohammed (2018) described the basic components and standard of electronic library criteria to include; size of room, number of electronic books, number of professional librarians and other learning resources as a scientific measurement to determine availability of electronic library services. Fowowe (2017) stressed that if a school does not meet the criteria, it cannot be qualified as having library services. Based on Fowowe and compared to the results of the real situation, all the three University library campuses had such services and resources. It is, therefore, not surprising that only 7 per cent of the respondents agreed their university to have electronic libraries due to some electronic books reserved in a computer room.

4.4.5. Familiarity with Various Types of Electronic Resources

The Information searching skills and outlay are used as indicators which indicate how the searching skill has met the standard of information searching in electronic environment. When the respondents were asked about types of electronic resources, skills and services they were familiar with, 56 per cent supported those electronic services not have a university electronic library. Among 6 librarians interviewed, 85 per cent admitted that they had electronic library where electronic books and other resources were stored. Furthermore, they revealed that students disliked sitting in that

computer room because it was a store electronic library. During field visit, the researcher observed that some teachers used electronic library rooms as resting and even as computer room where they kept and mark exercise books. Table 4 summarises these findings.

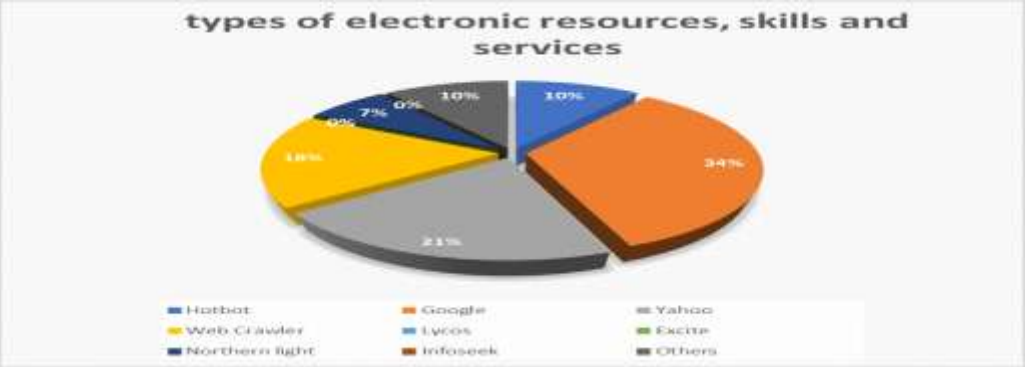
Table 4.9: Types of Electronic Resources, Skills and Services

Variables	Frequency	Percent
Hotbot	15	(10.3%)
Google	49	(33.8%)
Yahoo	30	(20.7%)
Web Crawler	26	(17.9%)
Lycos	00	00
Excite	00	00
Northern light	10	(6.9%)
Infoseek	00	00
Others	15	10.4
Total	**75**	**100.0**

Source: Field data, 2021

The results in Table 4.9 indicated that majority of the respondents considered the types of electronic resources, skills and services to be that of a e resources, followed by those who consider it to be that of a Staff/university.

Figure 4.3: Types of Electronic Resources, Skills and Services.

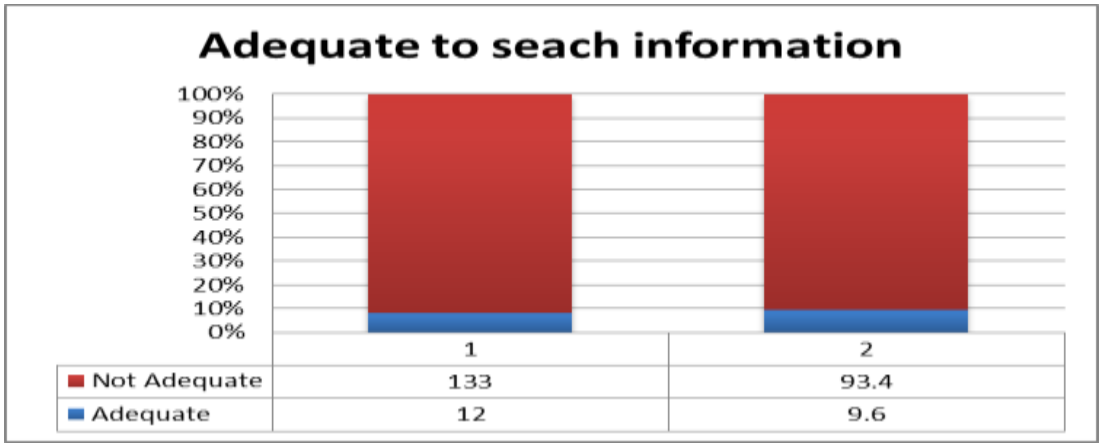


Source: Field Data 2021

4.4.6 Availability of Information Searching Skills

The motive of constructing electronic environments has been to enable library users to access and use its search engine and resources easily. In order to find out how the know searching skills from the electronic services, the respondents were asked to identify the search engines they were aware of. The results showed that at the university level, 90.7 per cent of students disliked to access and use electronic environment in searching for information, borrowing, learning materials and acquiring knowledge. In addition, the analysis revealed that a big number of the students were not accessing the information services as teachers did not encourage their students to make use of the electronic services. Meanwhile, the teachers were not using the library services as well (**Figure 1**).

Figure 4.4 Adequate for Search Information



Source: Field Data, 2021

4.4.7 Time Used in a Computer for Searching Information from the Internet

Students were asked to state how long they were allowed to use a computer for searching information from the internet. The findings showed that 40 per cent were

using one hour, 32 per cent were using two hours, 21 percent were using five hours and 7 per cent had no time limit for using University computer room (Figure 4). The results of interviews and focus group discussions indicated that the majority of university student' were limited to searching information the internet with the computer room services was due to poor services and lack of adequate electronic information infrastructure particularly computer network and other learning resources.

Table 4. 10 Time Used Computer for Searching Information

Time	**Frequency**	**Percent**
One hours	**36**	**30.8**
Two hour	**14**	**12.4**
Five hour	**9**	**6.6**
note time line	71	50.2
Total	**130**	**100**

Source: Field Data, 2021

Researcher again implied that, successful implementation of student hours for searching material within the University for sharing skills and knowledge towards improvement since the time is un limited the use of information searching skills in SUZA university not only for message and directives sharing but also for unique hour for using in the information searching skills.

The study findings are simialr to those revealed by Marchaline and Ahmad (2017) who found out that, the positive contributions of time to information search to the organisation include; knowledge sharing and skills due to information distribution among the employees and students which facilitates the attainment of the university goal. However, inapropriate use of information in electronic environment mislead the positive image as noted by the study having some respondernts which indicate some negative impacts such as infromation leakage and poor skills in University.

4.5 Challenges Facing Students in Searching Electronic Information

This objective of the study intended to find out the challenges facing information searching skills in University. Respondents were directed to choose the most challenges among wrong understanding and perceptions of the information searching skills.

Additionally, the study identified challenges facing information skills in the provision of electronic environment in university. By using multiple responses analysis, the results showed that the biggest challenge was lack of information searching tools which accounted for 27.1 per cent; followed by time limit 21.3 per cent. Others problems with network 18.2 per cent; narrow space of computer room 14.2 per cent; power services 10.7 per cent; and others 8.4 per cent. The study also interviewed some librarian and lecture of which 90 per cent agreed that lack of modern tools, lack of ICT infrastructure, lack of qualified staff, poor resources and services were mostly the challenges which hindered the development of information searching skills in general.

Table 4.11: Challenges Facing Students when Searching Information Electronically

	Challenges	Response	Percent
	Lack of information searching tools	40	27.1
	Time limits	14	14.2
	Problem with network	32	21.3
	Space of computer room	19	10.7
	No Services	30	18.2
	Others	10	8.4
Total		**145**	**100.0**

Source: Field data, (2021)

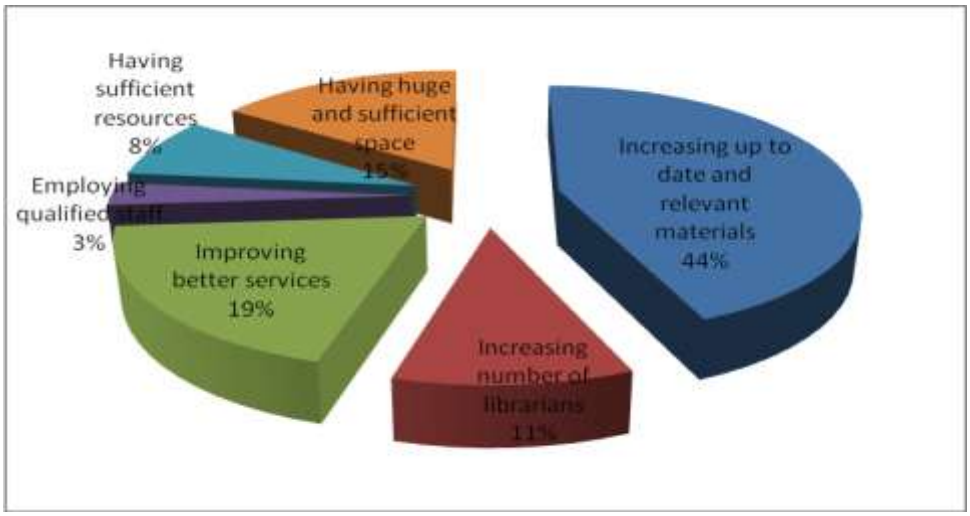
Figure 4.5: Challenges Facing Information Searching Skills

Source: Field data, (2021)

4.6. Recommendations on the Appropriate Ways of Improving Student's Information Searching Skills in an Electronic Environment

Respondents were also required to provide their views about suitable suggestions that should be taken to improve the information searching skills in the University environment. Most recommendations fell under the following results; 44 per cent suggested that up-to-date and relevant information searching materials should be increased; 19 per cent recommended improvement of ICT services; 15 per cent noted improvement of the electronic infrastructure; 11 per cent the need for having sufficient resources and about 3 per cent the need for employing qualified teachers. The results gave the picture that, if all of this suggestion could be implemented, the skills for searching information and electronic services would have been improved considerably.

Figure 4.6: Suggestion for Information Searching Skills in Electronic Environment



Source: Field Data, 2021

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the study summary found in the field together with the conclusions remarks relevant to study findings and finally end up with study recommendations

This study was conducted to assess information searching skills of university students in an electronic environment. Specifically, the study was guided by the follwing objectives namely; to find out the electronic information sources and services available to the surveyed libraries, examine the extent to which students were able to search information in electronic environment and to determine the existing challenges of information searching skills in electronic environment. Finally recommend appropriate ways of improving student's information searching skills in an electronic environment.

The study deployed a case study design to reach the findings and use both qualitative and quantitative research approach. Qualitative research approach analysed qualitatively and statistical methods used to analyse data from quantitave data obtained from questionanres. Both primary and secondary sources of data collections such as; interviews, questionnaires and documentary reviews were used. A total of 150 respondents including both male amd female were involved in all managememnt level .

5.2 Summary of Key Result

The first research objective indicated that, the Univerity used a combination of tools for information searching skills such as; internal memo, telephone, face to face commuincation in term of conference and internal meetings, email and intranet. Study findings in this part indicated that face to face and telephone methodhs were frequently used. For example, 62 (41.3%) of the respondents admitted face to face, 55 (36.7%) telephone, 10 (6.7%) internal memo, and 23 (15.3%) experienced email address in their daily searching information material in University students.

Apart from identifying the way of information searching, research also analysed the extents of information searching in electronic environment. The result revealed that, information searching skills in University environment has numerous benefits such as creation of work harmony by mutual relationship among University students, increase University control of uncertainty and risk management, give the directions to reach peformance of planned goal and facilites the distribution of the information timely for better decission making of the University. This was established from the findings of collected data that, more than half 120 (80%) of respondents agreed that, information skills within the electronic environment enabled students to receives working information and so far help to improve University performance.

Another research objective focused on the challenges that students faced in searching electronic information in electronic environment. The study found out that, lack of information searching tools, time limit for students searching material in computer lab, problem with nework and timing, ineffetcive computer lab strategy, information

leakage among the untrusted students and informattion barriers which resist the information to arrive at the embattled party were among the exiting challenges of information searching in University. For istance, data showed that, more than half of total respondents 88 (58.6%) agreed that infromation perceptions as the great challenges, 90 (60%|) of respondents again, revealed late information given to students and 86 (57.3%) agreed to experience the challenges of information leakage from unauthourised students which most likely hindered the University performance.

5.3 Conclusions

Conclusively, it is worth noting that, information searching skills is the key element in students performance. It encourages increases mental and conceptual skills of University students. To conclude then, from the findings it can be observed that the study found out that, public University use a multi tools of information searching in sharing information, the information sharing in electronic environment in the University institutions has several positive assistance for better organisation performance.

However, from the findings of the study, it was concluded that, information searching skills has many challenges which hinder the successfully implementatyion of the searching skills in electronic environment. The challenges of information searching skills has great effects if are not seriuosly addressed. These challenges include; late timing, information leakage amomg students, poor services in University, lack of information searching infrastructure. Other impacts of poor utilisation of information skills includes; risk and uncertainity, conflicts among

students, failure to reach University goal on time and poor management of the University students which eventually leads to poor students perfromance.

5.4 Recommendations

Based on the findings of this study, the following measures need to be taken to ensure that the University librarian and lecturer should play a key role in searching skills in university student. Others measures include

(i) The Government through the SUZA should ensure that activities and services conducted facilitate efforts designed to improve service delivery in searching skills in University student;

(ii) The State University of Zanzibar should put more priority on adequate provision of funds necessary for the provision of current and up to date information on searching skills and also for the students selected to SUZA and trained librarians;

(iii) There is a need to eastablish a comprehensive information searching skills strategy which would enable the students to share information quickly and timely. These strategies should include the installation of ICT tools for facilitating improvement of searching issues;

(iv) More efforts and priority should be taken to ensure that the culture of searching skills is promoted among the all University student. SUZA Schools should ensure that they revive their libraries with full equipment for student information surching skills, and learning resources that would encourage students to enjoy visiting and searching materials in University libraries.

5.5 Recommendation for Further Researchs

This research was carried out in public University at the State University of Zanzibar. The researcher assessed of information searching skills of university students in an electronic environment. There is a need to conduct the same study which would mainly focus on the barriers of the information searching in electronic environment and its effects of the employees' performance.

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APPENDICES

Appendix I

THE OPEN UNIVERSITY OF TANZANIA

Questionnaire for students

Dear respondent,

I'm Mwanakheir a Master of Library Information Management (MLIM) student of Open University of Tanzania (OUT) currently, I'm doing a study on The "Assessment of Information Searching Skills of University Students in an Electronic Environment. A Case of Study of the State University of Zanzibar (SUZA)". You are kindly requested to fill in the attached questionnaire and return it to a person who gave you.

All the information you will provide will be treated in confidence and will be only used for academic purposes and not otherwise.

Yours sincerely,

Ms. Mwanakheir

MLIM student.

Please put a tick (√) in an appropriate answer.

1. What is your age?

i) 18 – 24 years ( )

ii) 25 – 31 years ( )

iii) 32 – 36 years ( )

iv) 37 – 43 years ( )

v) 44 – 48 years ( )

vi) 49 – 55 years ( )

vii) 56 – 60 years ( )

2. What is your gender?

i) Male ( )

ii) Female ( )

3. Educational Level.

i) Certificate ( )

ii) Diploma ( )

iii) Degree ( )

iv) Master Degree ( )

v) PHD ( )

4. Does your library provide electronic information sources and skills for searching them?

i) Yes ( )

ii) No ( )

5. What types of electronic resources, skills and services are you familiar with? Please tick all applied.

i) E – journal ( )

ii) E - book ( )

iii) E – newspapers ( )

iv) Online catalogue ( )

v) E – reference services ( )

vi) Library portal ( )

vii) E – document delivery services ( )

viii) Not at all ( )

6. What do you search from the sources you visit?

7. What search engine do you know? Please tick all applied.

i) Google ( )

ii) Yahoo ( )

iii) Hotbot ( )

iv) Web Crawler ( )

v) Lycos ( )

vi) Infoseek( )

vii) Excite ( )

viii) Northern light ( )

ix) Others (Please mention them)……..…

8. Are you always satisfied with the results you obtain from search engines mentioned in question?

i) Highly satisfied ( )

ii) Satisfied ( )

iii) Moderate satisfied ( )

iv) Less satisfied ( )

v) Not satisfied (Please explain below) why not satisfied ……

9. Do you have any information searching skills as for as searching information electronically is concerned?

i) Yes ( )

ii) No ( )

If no how do you search electronic sources you need for your information

……

……

……

10. For how long are you allowed to use a computer for searching information from the internet?

i) Not time limit ( )

ii) One hour ( )

iii) Two hours ( )

iv) Five hours ( )

11. Is located time adequate for you to search information you need successfully?

i) Yes ( )

ii) No ( )

12. What challenges do you face when searching information electronically?

i) Lack of information searching ( )

ii) Time limit ( )

iii) Problem with network ( )

iv) Low speed of computer ( )

v) Others ( )

13. What are your views to address the identified challenges?

i) Computer literacy program to students ( )

ii) To ensure stability of network ( )

iii) Speed of computers should be activates ( )

iv) Any other solution mention

……

……

14. What are your suggestions towards the information searching skills of the University students

……

……

……

……

Thank you for your cooperation.

APPENDIX II:

Interview Guide

Checklist for the interview (key informants) interview guide for library staff in the State University of Zanzibar (SUZA)

1. What skills, services of an electronic sources are available in your library?
2. Which electronic sources do you normally subscribe in your library?
3. What is your observation concerning the number of computers available in your library?
4. How do you rank students` use of internet facilities and other types of electronic sources, skills and services of information in your library?
5. For what purposes do students often make skills for using the internet services?
6. What programs does your library provides to student ensuring the availability of necessary skills of searching electronic resources?
7. For what time do the students allowed to use internet facility?
8. What problems are students normally face when searching for electronic resources and services?
9. How frequently do students assistance concerning information searching?
10. What are your comments towards improving information searching skills of the university students?