USABILITY AND RELEVANCE OF GENERAL AND SCHOLARLY ELECTRONIC DATABASES BY UNDERGRADUATE STUDENTS: A CASE STUDY OF MOI UNIVERSITY, KENYA

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A Research Project submitted to the School of Education in partial fulfillment of the Requirements for the Award of the Masters of Library and Information Science Degree of Kenyatta University

July 2018
DECLARATION

I confirm that this project is my original work and has not been presented in any other University for certification. The project has been complemented by referenced work duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other works including the internet, the sources are specifically accredited through referencing with anti-plagiarism regulations.

Signature ..................................  Date ......................

Name  ...................................

Reg, No...............................  

SUPERVISOR DECLARATION:

I confirm that the work reported in this project was carried out by the candidate under my supervision as University supervisor

Signature  ............................  Date ......................

Name ....................................

Department  .............................

University  .................................
DEDICATION

This work is dedicated to my beloved parents Richard and Mariciana Okumu for their continuous inspiration, support and prayers which motivated me to pursue further studies.
ACKNOWLEDGEMENT

I thank God for granting me good health, grace and peace of mind that kept me during the entire of my study. I am also grateful to Egerton University for giving me an opportunity to pursue my studies.

A considerable number of people are worthy of recognition and appreciation. First I would like to express my sincere gratitude to my supervisor Dr. Charles Maina of the Department of Library and Information Science, Kenyatta University for his continuous support and guidance of my masters’ study and research.

Further, my sincere thanks to Dr. Mac Onyango a lecturer in the Faculty of Psychology and Educational Foundation, Egerton University, the Librarians and Students of Moi University who took part in the study their cooperation made my work easy.

Special thanks to my parents Richard and Mariciana, and my siblings who stood by me and gave words of encouragement to strive on especially when I felt like giving up. To all of you mentioned and unmentioned, I pass my most sincere gratitude, be blessed.
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## ABBREVIATIONS AND ACRONYMS

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<th>Description</th>
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<tr>
<td>AGORA</td>
<td>Access to Global Online Research in Agriculture</td>
</tr>
<tr>
<td>ACRL</td>
<td>Association of College and Research Libraries</td>
</tr>
<tr>
<td>ERIC</td>
<td>Education Resources Information Center</td>
</tr>
<tr>
<td>HINARI</td>
<td>Health Internetwork Access to Research Initiative</td>
</tr>
<tr>
<td>IFLA</td>
<td>International Federation of Library Association</td>
</tr>
<tr>
<td>INASP</td>
<td>International Network for Academic and Scientific Publication</td>
</tr>
<tr>
<td>ISO</td>
<td>International Standard Organization</td>
</tr>
<tr>
<td>KENET</td>
<td>Kenya Educational Network</td>
</tr>
<tr>
<td>KLA</td>
<td>Kenya Library Association</td>
</tr>
<tr>
<td>KLISC</td>
<td>Kenyan Librarian and Information Services Consortium</td>
</tr>
<tr>
<td>OARE</td>
<td>Online Access to Research in Environment</td>
</tr>
<tr>
<td>OCLC</td>
<td>Online Computer Library Center</td>
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</table>
The main objective of libraries in academic institution is to support teaching, research and learning, this is achieved through selection, acquisition and processing of information resources which include general and scholarly electronic databases. The potential of these databases in accomplishing students academic and research needs can only be measured through usability. This study therefore sought to establish usability and relevance of general and scholarly among undergraduate students at Moi university. Thus, studying the potential of the databases in satisfying students’ educational needs is of great importance because accurate usage data relates to the increasing need for public universities to justify the use of budget allocation to acquire and maintain general and scholarly databases. Information seeking behavior model by Wilson and human centered design by Norman were used. The objectives of the study were to: determine extent to which features of an ideal databases ( ease-of-use, usefulness, familiarity) influence usability of general and scholarly databases; establish extent to which awareness of general and scholarly electronic databases among undergraduate students influence usability; determine extent to which quality of content of general and scholarly electronic databases influence usability among students in the university; establish extent to which courses offered influence usability of general and scholarly database among undergraduate students in the university. Survey method was employed; a sample of 96 from a target population 463 university students was utilized. Proportional sampling technique was used to determine the sample size of students per year of study and gender. Tools for data collection were questionnaires for students and interview schedule for the university librarian and librarian in charge of e-resources. Data collected which was quantitative and qualitative was analyzed through descriptive statistics, graphs and charts were used in converting numbers into visual displays. The study established that usability problems such as structure of the databases can disrupt students’ information seeking activity and affect information search accomplishment. The study also established that students preferred the least effort principle in usability of databases. The study further established that students believed that information retrieved from internet search engines was relevant compared to information retrieved from general and scholarly databases subscribed by the university. It is hoped that, the findings of the study will contribute to knowledge and assist institutions of higher learning in Kenya to identify and invest in systems and programmes that are user centered and posses’ potentials that enables students to accomplish their goals
CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

The topic under investigation is provided under this chapter where a global, regional overview of the problem is discussed before focusing on the local scenario. The chapter shows a clear link between the current study and other similar studies that have been done. The chapter is organized in various sections which include; introduction and background to the study; statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitation of the study, assumptions of the study, theoretical framework, conceptual framework and operational definition of key terms.

1.2 Background to the Study

Academic libraries play a fundamental role in supporting academic programmes in Public Universities’. The libraries select, acquire and process information resources which include general and scholarly electronic databases and further facilitates access of these resources to students to support research and learning regardless of place or location (Kwado, 2015).
General and Scholarly electronic databases are principally systems in which information is stored in electronic form and made accessible through computer networks. These databases facilitate intellectual communication between members of a particular academic discipline and the public, mode of access to the databases is by paid subscription (Naqvi, 2012). Databases can be categorized by the scope of information they contain. General databases include information resources from several different disciplines that are useful in satisfying undergraduate students’ research and learning needs. The databases cover subjects and disciplines such as; social sciences, humanities, education, computer science among others.

General and scholarly databases contribute a great deal to the overall quality of research papers produced worldwide, thus librarians should pro-actively promote usability of general and scholarly databases in institutions of higher learning and ensure that databases subscribed to by the university have the potential of accomplishing students research and educational needs.

According to Hartson, Shivakumar & Perez-Quinonos (2004) databases should contain certain features that influences usability these include ease-of-use, terminology, ease of navigation, learnability and aesthetic appearance. This is supported by Rahman and Ahmed (2013) that usability of databases are influenced by attributes such as navigation which improves users performance as they are able to trace their place as they search and retrieve information.
Additionally the aesthetic appearance and layouts has a crucial role to the overall satisfaction rate (Jackson, 2001).

According to Dulanov and Pajarillo (2001) usability measures of general and scholarly databases is valued in universities in the United States of America (USA) they state that usability measures provide faculty and libraries feedback from students usability of the databases. Further faculty members believe that a system that evokes more satisfaction in the user is valued better, as one that delivers the goods that it is intended to.

Similarly, Dickstein and Mills (2000) observe that libraries have tended to structure their holding and structure around what they believe was good for their customers. The University of Arizona library which is in the USA has been trying to change the model, where librarians’ are actively working to transform the institution to a user-focused library by asking their users what they need and in what format.

With innovations such as Google, Google scholar and open access content undergraduate students have a number of options when searching for information for their research and assignment (Burns, 2014). He continues to note that students consistently and frequently use the library web sites, internet search engines to find information rather than navigating library web page for authoritative and reliable scholarly databases. Therefore, if students are
searching rather than navigating library web page designers must make metadata powerful search engines priorities.

Information seeking behavior theorists contend that the effect of information sources structures in the information behavior literature as one of the many intervening variables in the information seeking process that can be supportive or preventive of database usability (Wilson, 1999).

Park (2002) identified a set of attributes such as ease of use, terminology, navigation and learnability as crucial for database interaction. In addition a well designed navigation system aid information retrieval in general and scholarly databases further, functions should be explicitly stated in the description of the databases where students should feel they control the tool and they are free to navigate within it. Typographical errors in databases are not trivial matter; user can have little confidence in a database in which many typographical errors occur. Moreover such errors can have significant effect in search result, causing some records not to be retrieved when they should be and others to be retrieved when they should not be.

Ebenezer (2003) observes that terminology raises important barriers in students understanding of principle functions of databases and contributes to negative changes in their effective state. Navigation is an important factor in searching and accessing general and scholarly databases, navigation improves students’ performance as they are able to trace their place as they search and retrieve information (Hartson, Shivakumar and Perez-Quinones, 2004).
Aesthetic appearances’ and layouts have a crucial role to the overall students’ satisfaction in usability of general and scholarly databases (Jackson, 2001). Similarly, system features have effect on both user perception, ease of use and usefulness. However relevance, which is considered as a system feature, is related only to perceived usefulness (Xie, 2002).

The concept of relevance defines whether the databases constitute valuable tools for completions of students’ tasks. Xie (2002) observes that students will seek information from databases that are relevant in terms of subject proximity and integratable in terms of content morphology. Thus usability stands on the students’ centered axis, focuses on the effective, efficient and satisfactory work accomplishment and aim to support a normal and uninterrupted process between the students and the database.

According to Ebenezer (2003) relevance of a database is determined by checking the frequency of database revision policy, the number of articles and cited references added. Subject coverage is also considered, subject determines if the journal is highly relevant to its particular area of topic and target audience. Journals that are well designed are configured to present a topic to a specific national, regional or worldwide audience. He continues to note that authority of a database is considered a factor in determining the relevance of the database content and subject proximity, questions such as who is the publisher of the database?, the credibility of the persons responsible is crucial in the production of databases, this ensures users of the database accurate and reliable information.
In institutions of higher learning in Africa rapid expansion of information communication technology has brought revolution to the role of libraries, and the changing nature of information resources has subjected libraries all over the world to face new challenges of meeting users’ needs. The information age is heading towards an era where digital information will be much needed than ever (Atakan, 2008). In addition, benefits brought about by search engines for library operations cannot be overemphasized; search engines link users to databases and other bibliographic sources. Bibliographic databases have traditionally referred to the abstracting and indexing services for scholarly literature, these services focus on collecting the citation information and abstracting of research articles and making them searchable and usable (Trawick and McEntyre, 2004).

According to International Standards of Organization (ISO, 1998) usability can be defined as

“the extent to which a product can be used by specified users to achieve a specified goal with effectiveness, efficiency and satisfaction in a specified context of use”.

The ISO definition clarifies that products such as general and scholarly electronic databases are designed for specified users and for specified goals. Programmes such as AGORA and HINARI which are designed for specified users and for specified goals in institutions of higher learning in Kenya, have resulted in free access to journals and databases at discounted rates. However,
undergraduate students in universities in Kenya have a tendency of relying on internet search engines for their research and assignments, with believe that the search engines are easy to use, effective and satisfy their needs (Martin, 2008).

Google search engine has become predominant among undergraduate students because of friendly user interface, free text searching of the content of public web pages as well as superior in coverage and accessibility. On the other hand library systems are superior in quality of results and accuracy is similar in both systems. Usability of general and scholarly electronic databases in university libraries is crucial in establishing whether the databases have the potential of satisfying students’ research and educational needs. General and scholarly databases are known for good subject coverage, unique features and because the systems are accessed through the internet, improved information sharing among undergraduate students is achieved (Fialkoff, 2005; Brophy & Bawden, 2005). However, for effective usability of the databases university librarians should intensify their awareness campaign concerning availability of general and scholarly electronic databases, use of e-mail alert systems, workshops and seminars should be adopted and awards should be considered for those who use general and scholarly electronic databases for their information need as a way of promotion (Naqvi, 2012).

It is paramount for public universities in the country to cultivate an environment that will lead to usability of general and scholarly electronic databases. To maximize on the usability of general and scholarly databases, Public and
Private Universities in Kenya came together in order to pull financial resources to achieve the dream (Shibanda, 2006).

Moi University located in the town of Eldoret in Western Kenya is the second public University to be established in Kenya, in 1984 by the Moi University Act of parliament after recommendations from the Mackey Commission. The University’s vision seeks to be recognized nationally, internationally as the University of Choice in nurturing innovation and talent in science. For the university to achieve this, information is vital, therefore general and scholarly electronic databases would be instrumental in providing information to undergraduate students that supports their information and research needs.

The University, which is served by the Margaret Thatcher Library, has played a big role in establishing, promoting and creating awareness of general and scholarly database to Moi University community through newsletter, brochures, orientation programmes and training on how to access and use these databases.

Moi University being a member of KLISC is currently subscribing to about 35 general and scholarly databases. Some of these databases are; Education Resources Information Center (ERIC); Online Access to Research in Environment (OARE); Access to Research in Health Programme (HINARI); AGORA; JSTOR, OSA-(Optical Society of America), Emeralds group publishing Limited, EBSCO Host; among others, outside the subscription databases include; Small Business Resources, Phil papers, e-granary and other
free internet databases. The consortium’s mandate is to evaluate the databases before subscribing. The Method of evaluation includes reviewing usability in member institution using statistics of usage, analysis and surveys. In addition, needs of member university are also considered. Consideration of the budget that KLISC has for the purchase and subscription of the databases is also very important. Therefore, Moi University Nairobi Campus, which is a satellite campus of Moi University, benefits from a wide range of electronic databases that the University subscribes to and made available through the consortium.

Noreh (2009) observes that, harnessing usability and relevance of general and scholarly electronic databases means more than one method of learning. Applying hands-on learning, the information has better chance of being stored in the memory for useful retrieval. Undergraduate students actually become part of the learning process and not just as spectators, but because they are participating in the learning process thus are motivated to learn.

According to Oyieke & Dic (2010), the major challenges undergraduate students experience with usability of general and scholarly electronic databases is difficulty involved in performing search tasks and to the accessibility of document content. Lack of awareness of the existence of the databases in their area of study, apathy, poor network infrastructure and power outage. These challenges hinder effective, efficient and satisfaction on usability of the databases. Based on this premises highlighted thereof, this study sought to
establish usability and relevance of general and scholarly electronic databases amongst undergraduate students in Moi University in Kenya.

1.3 Statement of the Problem

In institution of higher learning all over the world usability of general and scholarly databases have an influence on the lifetime achievement of the students. Thus institutions of higher learning in developed states such as United States of America and Europe have identified features that influence usability of general and scholarly databases in a particular environment. As part of best practices, academic universities in Kenya have also clearly outlined features and attributes of general and scholarly databases subscribed to by the university in their policies and strategic plans and standards set by Commission of University Education (CUE). In spite of this usability and relevance of general and scholarly electronic databases among undergraduate students continues to deteriorate. This study, therefore, sought to answer a number of questions; are general and scholarly databases subscribed by the university relevant in achieving students’ goal? Are students aware of the existence of the databases? Which features of databases influence usability? What challenges do students experience when searching and accessing the databases? These questions are useful in understanding the strength of the study. The study therefore sought to evaluate usability and relevance of general and scholarly electronic among undergraduate students at Moi University in Kenya.
1.4 Purpose of the Study

The purpose of this study was to establish usability and relevance of general and scholarly electronic databases in satisfying undergraduate students’ information needs at Moi University in Kenya.

1.5 Objectives of the Study

The study was guided by the following objectives:

i) To determine extent to which features of databases (ease-of-use, usefulness, familiarity) influence usability of general and scholarly databases among the students at Moi university in Kenya.

ii) To establish extent to which awareness of existence of general and scholarly databases influence usability among undergraduate students at Moi university in Kenya.

iii) To determine extent to which quality of content of general and scholarly electronic databases influence usability among undergraduate students at Moi university in Kenya.

iv) To establish extent to which courses offered at the university influence usability of general and scholarly database among undergraduate students at Moi university in Kenya.
1.6 Research Questions

The study was guided by the following research questions:

1. What is students’ preference between usability of general and scholarly electronic databases and other internet search engines such as Google?
2. Which databases are most popular?
3. How does training on usability and relevance of general and scholarly databases affect the use of the databases?
4. What challenges do undergraduate students face when using general and scholarly databases in relation to other internet search engines, Google?

1.7 Assumptions of the Study

It was assumed that:-

i) The respondents objectively and willingly filled the questionnaires correctly.

ii) The library policy allowed for unrestricted access to general and scholarly electronic databases to all on campus and users’ on the campuses wireless networks.

1.8 Limitation of the Study

The researcher relied purely on students’ feedback.

Heavy students’ workload, to some extent might have affected the results of the study because they are required to take part in many studies and their work.
Finally the study was done in one public University in Kenya using undergraduate students. The findings of the study were generalized only to undergraduate students.

1.9 Significance of the Study

The results of this study are anticipated to be of importance to the following:

Library and Librarians;

It is hoped that the findings of the study will enable university librarians to identify the shortcomings of usability and relevance of general and scholarly in their respective institutions. This might assist in coming up with appropriate policies to make usability of databases effective and efficient.

Database vendors;

It is hoped that the findings of the study may assist database vendors come up with database packages that are relevant to the students needs.

It is also hoped that the findings will assist vendors in coming up with user guide manual, which will guide librarians and students on how to navigate through the database.

Students

It is hoped that the findings sensitize students on the availability of general and scholarly databases subscribed by the university, as well as influence the usability of the databases.
1.10 Theoretical Framework

This study was guided by the following two theories:

1.10.1 Wilson’s Model of Information Seeking

1.10.2 User- and Human-Centred Design

1.10.1 Wilson’s Theory of Information Seeking

The problem solving model as projected by Wilson guided this study, the model entails possible steps taken by users’ of information in the course of seeking for information in order to satisfy a situation. Wilson notes that to fulfill these needs the user makes demand upon information system, such as general and scholarly electronic databases. The model emphasizes that information need of the user as the most important aspect in originating and encouraging the entire information retrieval system. The main features and ideas that are apparent in Wilson’s information seeking model can be relevant to evaluating usability and relevance of general and scholarly databases by undergraduate students. The other basic feature in Wilson’s representation of information need and searching are three major types of barriers in the context of information need; psychological, demographic, and environmental or source characteristics; these barriers may hinder usability of the information source consequently leading the user to other sources that are easy-to use systems such as internet search engines or abandon the entire search. Wilson further notes that the effect of information sources structures have been acknowledged in the information
behavior literature as one of the many variables in the information seeking processes that can be supportive or preventive of information usability.

1.10.2 User- and Human-Centred Design

According to Norman (1986), user centred design is a design philosophy that seeks to place the end user at the centre of the design process. Norman put forward guidelines that designers could follow in order for their interfaces to achieve good usability outcomes. The International Standards Organization (ISO, 1998) define human centred design as ‘an approach to system design and development that aim to make interactive systems more usability by focusing on the use of the system and applying human factor/ergonomics and usability knowledge and techniques’. The standard also describes the potential benefits of following a design approach that improves usability and human factor. Usability systems improves productivity, enhances user well being, increased accessibility and reduced risk of harm. Putting the user at the core of the design process is the guiding principle of a philosophy related to Human Centred Design. The aim of the design is to create accessible products, environment, and services for all users regardless of physical and cognitive abilities. Human Centred Theory explicates attributes of a usable interface-easy-to-learn, efficient to use, easy to remember, causes fewer errors and pleasant to use. For example for usability to proceed smoothly users must be able to understand the system they are using. However, if there are designs
inferences information seeking activity can be disrupted, thus affect the search accomplishment.

1.11 Conceptual Framework

This study was guided by a conceptual framework that represents the interrelationship among the variables used in the study. The dependent, independent and intervening variables identified in the study are as presented below:

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Intervening Variable</th>
<th>Dependent Variable</th>
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<tbody>
<tr>
<td>General and Scholarly databases</td>
<td></td>
<td></td>
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</tbody>
</table>
| • Features for usability
  - easy-to-use
  - familiarity
  - least effort
  - Social influence
| • Awareness of general and scholarly databases
  - AGORA
  - EBSCO
  - JSTOR
| • Constitute valuable tools (coverage)
  - information needs
  - research
  - assignments |
| • Navigation skills
  • Information system structure
  • University environment
  • License procedures
  • Gender |
| • Usability
  • Relevance
  • General
  • Scholarly
  • Databases |

Figure 1.1: Relationship between factors that determine usability and relevance of general and scholarly databases
Figure 1.1: Show relationship between the independent and dependent variables of the study. Usability of the databases are dependent on ease-of-use, familiarity, experience, social influence, learnability and least effort. However, intervening variables navigation skills, university policy, information system structure, students characteristics such as gender and year of study may influence usability of general and scholarly databases. University based factors namely physical equipment’s and peer influence can also have an impact on the desire to usability of the databases. The family socio-economic status, parents occupation educational level, gender roles may have a huge impact on usability levels among the students..

1.15 Operational Definition of Key Terms

Database - A collection of information that is organized so that it can be easily accessed, managed and updated.

Digital literacy skills - The capacity to appreciate and use information in multiple information formats from a wide variety of resources when presented via computers.

Electronic databases - Information resources and services’ stored and disseminated electronically.

General database - These are electronic databases that cover all multiple subject areas.

Information literacy - The capacity of individual to be able to identify
<table>
<thead>
<tr>
<th>Skills</th>
<th>information needed, locate the information and use it to make decisions,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usability</td>
<td>Method by which users of a product are asked to perform certain tasks in an effort to measure the products ease-of-use, task time and user’s perception of the experience</td>
</tr>
<tr>
<td>Information seeking</td>
<td>The process of attempting to acquire information from human being and information systems.</td>
</tr>
<tr>
<td>Scholarly databases</td>
<td>These are electronic databases, written by experts and are based on original work</td>
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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents an overview of the literature; the chapter has been organized as guided study by the objectives of the study. The chapter provides a critical review of literature as follows: the concept of usability, features of a database and usability of general and scholarly databases, awareness of general and scholarly databases and usability among undergraduate students, relevance of general and scholarly databases and usability, of concept of usability, importance of promoting and creating awareness of availability of general and scholarly database among undergraduate students and importance of ensuring that databases subscribed by the university are relevant and enables students achieve their educational and research needs. It also discusses extent to which degree programmes offered influences usability of general and scholarly database and challenges experienced with usability of databases.

2.2 The Concept of Usability

Usability is a key concept in Human Computer Interaction. It is concerned with making systems safe, easy to learn and easy to use (Nielson, 2012). The concept usability is formally defined by International Standards of Organization (ISO,
1998) as the effectiveness, efficiency and satisfaction with which a certain user may achieve a specific objective in a particular environment. According to these standards effectiveness represents the percentage of use of the system in reference to its possibilities, efficiency concern the quality of effort required for the purpose, the effort that is required the lower the efficiency of the system in question. The concept of satisfaction is related to the comfort that the user experiences in using the system (Soegaard, 2012). He further states that the concept of usability has its more recent and direct origin in the falling prices of computers to the 1980’s, when for the first time it was feasible for many employees to have their own personal computers. In the 1980’s most computer users had practically no, or only basic training on operating systems and application software. For the average user, interactive computing became associated with constant frustrations and consequent anxieties, computers were obviously too hard to use for most users and often absolutely impractical.

The primary goal of usability evaluation is to improve the usability of the system that is being tested and to improve the process by which systems are designed and developed. According to Park (2002), easiness of use is considered a crucial attribute of database interaction especially in advanced system like aggregated search interface. Thus usability studies offer a way to determine how individual users are using on-line electronic databases and a means to analyse how users interact with online electronic database functions in order to achieve their goals (Tenopir, 2000).
The interest for usability experience in libraries has grown rapidly over the past years and has become an essential tool for developing and accessing a library’s digital services and physical spaces (Lauersen, 2016). These lessons on usability remain valuable to us even today. It is important to recognize the importance of encouraging development of usability evaluation strategies in addition to services offered in university libraries.

2.3 Database Features and Usability of General and Scholarly Databases by Undergraduate Students

Innovations in Information and Communication Technology have revolutionized the way students’ seek for information in databases. This has greatly affected services offered in institutions of higher learning. Library users’ can now access on-line databases and journals remotely. The development of societies and individuals depends on reservoir of information the Country has, how the information is organized and made accessible for decision making that would improve on the lives of the society and the decrease of doubt (Chowdhury, 2010).

Trawick, (2004) observes that technological advances over the past decade have expanded the horizons of bibliographic database creation from using abstract only to using longer pieces of text. Further, the rise of the internet and other search engines has provided the opportunity to build online, searchable literature databases that are accessible to anyone with an internet connection. In
response to these opportunities, publishers, libraries and other information providers have adopted new electronic publishing technologies to develop many forms of online content. These include databases of journal abstracts, full-text articles and books.

Further, Hilsabeck (2015) notes that as general and scholarly database become more interactive and complex, usability testing is an important part of usability of the databases success. He further notes that to achieve success the most important aspect is to test whether users are able to accomplish their goals when using the databases. In addition, learnability which is mainly concerned with how easy the user can learn how to use the system is a very crucial aspect of usability success. The question we should ask is how easy is it for new users to learn the interface and perform a task? There should be sufficient help features such as tutorials, online tips and hints. Other database features that play an important role in achieving usability include; efficiency on how the interface can be improved to reduce errors, readability which involves ease of comprehension and legibility, site navigation which is mainly concerned with findability and efficiency and finally accessibility which revolves around cross browsing and color choices, not forgetting website speed how fast it takes to load a page. Hence the study set to establish features of an ideal database that influence usability of general and scholarly databases among undergraduate students at Moi university in Kenya, together with challenges experiences with usability.
2.3.1 Information Needs and Information Seeking Behavior of Undergraduate Students

The theory of information seeking is a process in which participants can act both as receivers and senders (Backlund, 2003). Clients of information present diverse information needs, where information is received to solve problems and develop policies. A case in point is where entrepreneurs seek for information in order to improve on their business skills and share the acquired skills with other professionals in the field (Yusuf, 2012). In institutions of higher learning need for information and the process of searching for the information are motivated by factors such as personal, professional and entertainment (Rubina, 2010).

Demographic characteristic of users, enables manager identify strengths, weaknesses and opportunities. This enables the development of valuable collection and appropriate information retrieval system that satisfy users’ needs. According to (United Nations Educational and Scientific Organization[UNESCO], 2008), Knowledge is power, and information enables individuals to grow socially, politically and economically. In view of the above Anafo (2014) asserts that without the knowledge and experience of usability, undergraduate students’ will often be underprivileged as they search for information to achieve their educational and research needs.

Research findings confirms that undergraduate students usability of internet search engines for their information needs is overwhelming compared to usability of general and scholarly databases subscribed by the university even
though the students realized that library resources are authoritative and credible in terms of content and subject coverage (Martin, 2008; Weiler, 2005; Schmidt, 2007). This preference to search engines can be attributed lack of awareness on the availability of general and scholarly databases among undergraduate students’ and apathy on use of scholarly electronic information resources, due to their complexity (Peggy, Szymborski & Norilli, 2006)

In view of the above the (ACRL) 2006 observes that academic institution need to encourage best practices in usability of general and scholarly electronic databases, by ensuring that the databases are designed according to needs of specific users’ and by ensuring that competent and professional staff are employed who assist users’ access and use library databases. According to Nadzi, Wahabe & Othman (2015: Lea et al. (2013) usability of internet search engines by undergraduate students can be link to Wilson’s principle of least effort and easy to use. Hence, the study seeks to establish information needs and information seeking behaviour among undergraduate students at Moi university.

2.3.1.1 Criteria for Evaluation of General and Scholarly Databases

One of the International Federation of Library Association standards concerns information literacy which states that:-
“An information literate individual is a person who can evaluate information critically and competently in order to determine the accuracy of the information”.

Public and private institutions subscribe to general and scholarly databases, for this to be effectively achieved librarians and other stakeholders should evaluate the databases in order to determine their users’ requirements. This will address relevance to the databases to the category of users’ the databases should be serving thus satisfy their information needs (Cole & Ma, 2001). Librarians’ should be in the fore-front in assisting students’ with the processes involved in evaluation of information resources. However, very little research has been done on how students select and evaluate general and scholarly databases in an environment with diverse information sources and systems (Rempel et al., 2003).

Assessment of worth of general and scholarly electronic information databases has a great impact in achieving the objectives and mission of institutions of higher learning. The judgment enables libraries subscribe to electronic databases that have returns to investments, which according to this study was considered to be effective usage of general and scholarly electronic databases. In view of the above, Hung (2004) observes that when evaluating general and scholarly databases undergraduate students’ employed only one or two criteria and used them repeatedly to evaluate the databases. In addition the students considered familiarity with a database as a major factor for selection and evaluation.
2.3.1.2 Evaluation of HINARI Databases

In the library world, the term database refers to the search tools used primarily for identifying resources these databases are either multidisciplinary covering many subjects or specific focusing on one subject area. For instance, HINARI access to research for health, set up by World Health Organization (WHO), together with major publishers, enables low and middle income countries to gain access to one of the world’s largest collections of biomedical and health literature up to 14,900 journals, 60,000 e-books, and 105 other information resources are available in health institutions in more than 115 countries, areas and territories benefiting thousands of health workers and researchers, and in turn contributing to improving world health (WHO, 2018). Surprisingly, HINARI database contain other important relevant information in economics, ethics, legal journals and other subject categories. The authority of the database is unquestionable, the authors and authors affiliations are clearly indicated with contact information. Information is peer-reviewed and pages are error free an indication that authors check information in the database to ensure accuracy. Information in the database is updated regularly and the coverage includes e-books, journals and magazines.

2.3.1.3 Evaluation of Web of Science Database

Web of Science database, published by Thomas Reuters, is also a multidisciplinary abstracting and indexing service with different components to
which libraries and academic institutions can subscribe in combination. Journal indexing is cover-to-cover for 16,959 titles including 726 open access publication (Goodwin, 2014). He further notes that Web of Science is a commonly used search tool in academia. The data also rank journals reproductively and total number of citation to indicate impact prestige and influence. The principle behind bibliometrics and cited reference searching are used by Web of Science, to track impact of authors, their scholarships and where they opt to publish. The database is updated with approximately 25,000 articles and 700,000 cited references added each week. The database has a feature that enables users to navigate through the literature and search all disciplines and time periods. Selectivity is upon which web of science is Core collection is founded, web of science journal evaluation is guided by citation performance of the journal such as total citations and trends and patterns within citations. Subject relevance is also considered, is criterion determines if the journal is highly relevant to its particular areas of topic, Target audience a well-produced journal is configured to present a topic to a specific national, regional or worldwide audience.

2.4 Awareness and usability of General and Scholarly Databases by undergraduate students at Moi University in Kenya

The primary purpose for establishing universities is to support teaching, learning and research. To achieve this university libraries are equipped with
print and electronic resources, which include e-book and e-journals and other computer based electronic networks (Shuling, 2009).

Lack of knowledge of the existence of general and scholarly electronic databases is a major challenge undergraduate student’s experience thus hindering effective usability of general and scholarly electronic databases (Oyieke, 2010). The Library’s main objective is to support the parent organization in achieving its mission by proving information resources both electronic and e-format. Creating awareness on the availability of these resources is very important in achieving maximum usability of the databases. Awareness of availability of general and scholarly electronic database can be realized by marketing library services through university open day, cultural weeks and open access training, where the library trains users on access methods, formulation of search strategies and educating students on databases that are available in their area of study and how to access and retrieve information from the databases. Posters, brochures and manual guides can also be used to create awareness on availability of general and scholarly databases (Naqvi, 2012). Further Thanuskodi (2012) observes that awareness of database availability has opened up research prospect and potentials for undergraduate students in academic institution thus university libraries should create conducive environment for usability of these products and services.
According to Angello (2010); Msagati (2014) majority of undergraduate students in academic institutions in Kenya are not aware of availability of general and scholarly databases subscribed by their respective universities, this greatly affects usability of general and scholarly database. This supports (Schmidt, 2007) argument that over reliance on internet search engines and Google in particular by students, is mainly due to lack of awareness of the existence of general and scholarly databases among the students. To reverse this trend Naqvi (2012) opines that libraries should come up with strategies of creating awareness to users on general and scholarly databases available in the library. Through active publicity programmes, and also develop a strategic plan that will improve usability of electronic database by students. In addition, university libraries should exploit other avenues of creating awareness of general and scholarly electronic databases such as use of social media and e-mail alerts system. This will eventually lead to usability of general and scholarly databases database in institutions of higher learning thus supporting students educational and research needs, the study sets to establish sources of awareness and awareness levels of general and scholarly databases among undergraduate students at Moi university in Kenya.

2.5 Relevance of General and Scholarly Databases

The concept of relevance according to Tsakonas & Papatheodoros (2008) basically entails suitability of the databases in fulfilling users ‘educational needs. When conducting research or assignments, undergraduate students seek appropriate resources such as general and scholarly databases. These databases
should contain relevant information in subject coverage and content. Information searching processes entails identifications of attributes such as relevance, reliability level of the provided information, format and temporal coverage, thus it is important to address quality, relevance and accessibility of documents when accessing and retrieving information. Ebenezer (2003) has observed that terminology triggers important barriers in users understanding of principal functions of systems thus deny users access to information. Hong (2002) on the other hand, notes that the concept of relevance defines whether the databases constitute valuable tools that enable completion of a task.

Relevance answers the questions, are the databases supporting students information needs such as need for research, authorship and assignments. He further notes that students will seek information resources from databases that are relevant in terms of subject proximity and integrateable in terms of content morphology. However, Xie, (2000) opines that relevance which is considered a system feature and related only to perceived usefulness and information seeking behaviour of users has demonstrated that despite retrieval of full-text resources other levels of information such as abstract are also preferred among undergraduate students. The study sets to establish extent to which relevance influence usability of general and scholarly electronic databases.
2.5.1 Usability of General and Scholarly Databases by Undergraduate Students at Moi University in Kenya

According to Nielsen (2012) usability is a method by which users of a product are asked to perform certain tasks in an effort to measure the products ease-of-use, task time, and users’ perception of experience. Usability stands on users, the user centred axis focuses on effective, efficient and satisfactory work accomplishment and aims to support a normal an uninterrupted interaction between the user and the system. Jackson (2001) observes that aesthetic appearance and layout has a crucial role to the overall satisfaction rate of database users (Van Scoyoc & Cason 2006).

According to UNESCO (2015) usability of general and Scholarly electronic databases is now considered a custom in the academic institutions. However, students pattern of access and usability of general and scholarly databases tend to rely on internet search engines which are easy-to-use, easy to access and retrieve information (Connaway, White, Lanclos& Le Corny, 2013; Mbabu, Bertram &Varnum, 2013). Consequently, academic librarians, who invest large portions of their acquisition budget for general and scholarly database, and providing trainings on access and retrieval, are more or less dissatisfied with the students’ choices of information resources and with use of general and scholarly databases. Nevertheless, Simon (2015); Gakibiyo, Odongo & Okello (2013) opines that awareness, trainings on access and retrieval of information...
and ICT skills are not the only barriers’ to effective usability of general and scholarly databases, other factors such as lack of computers and internet access, poor network connectivity, interface features, options for navigations, database selection, difficulty to decide database to select as major challenges experienced by undergraduate students with usability of general and scholarly databases.

Despite these challenges, the internet and internet search engines have revolutionized usability of general and scholarly electronic databases and have enabled information transfer and sharing much easier and faster, where researchers of the 21st century can access their work and communicate with one another across the world in digital format (Ying, 2012; Li & Jagadish, 2012; Fast & Campbell, 2004). Further, the search engines have created a generation of users who are choosing simplicity over the perceived complex library general and scholarly databases.

Haglund, Lotta & Olsson (2008) in their observational study performed at three universities in Stockholm, Sweden found that almost all researchers used Google for their research in which they were sure that they could manage on their own, the researchers had very little contact with the library and the librarians and considered library use as complicated compared to Google.

According to Michael (2003) for effective usability of general and scholarly electronic databases, it is important to understand features and factors that motivate students use general and scholarly databases in a library setting. He
continues to note that self-efficacy influence academic achievement, and that students’ who are self-driven in knowing what academic libraries offer in terms of information resources will be more prone to higher self-efficacy. Otherwise, as stated by Anafo (2014) the 21st century students will go for short cuts to achieve their goals as they fulfil their educational and research needs.

In Kenya usability of general and scholarly electronic databases has gained ground in University’s since the introduction of Programme of Enhancement in 2000. At the same time the project necessitated the librarians and other information professional to establish Kenya Library Information Science Consortium (KLISC). The consortium has played a big role in ensuring that information needs of member libraries are considered, which assists the universities achieve their goals.

Njoroge (2008) evaluated use of electronic databases in academic institution in Kenya; findings revealed a high awareness level of electronic databases subscription by the Catholic University of Eastern Africa community. However, only 5% knew the subject coverage of most of the databases, extent of usage average where majority were postgraduate students. She continues to note that 84% indicated that they got to know about the electronic databases through the library staffs while 16% from their colleagues.

Oyieke(2010) identified the major challenges for effective usability of general and scholarly electronic databases among undergraduate students in Kenya to
unstructured training programmes, students not knowing general and scholarly databases that are available (awareness) and unreliable network infrastructure. This study sought to establish extent to which features of an ideal database influence usability of general and scholarly databases among undergraduate students at Moi university in Kenya.

2.6 Courses offered and Usability of General and Scholarly Databases by Undergraduate Students at Moi University in Kenya

Information searching activities stems from an apparent need for information by the client, the information need, may arise from the role of the person in the environment, life style or course work. Callinan (2005) investigated information searching activities of undergraduate students, a proportional examination of fresher’s and fourth year students in Dublin University College. Almost 40% of the students in their early years of study did not use books for their course work. Whereas 4% of the student in their final year taking biochemistry indicated to use print books for their course work. A large number of students in their early year in the university taking biology used web-sites for their course works than those using library books.

On the other hand, Rezvanfar (2009), study on information searching activities by undergraduate students majoring in agriculture and education, found that awareness of availability of general and scholarly resources and availability of library resources such as computers were the most important factors in students’ information seeking behavior. Similarly Brown (2005) study at the
University of Oklahoma USA on established that molecular biology graduates rely on the all-embracing reservoir of databases, but do not wholly exploit the general and scholarly databases although they are within their easy reach. Further, Gardiner (2006) study on the information activities of teaching staff of universities in Britain taking different courses established no major difference in the use of Google search engines. However, half of the respondents still make use of print resources. Moreover, Rezvanfar (2009) findings established that awareness of library scientific resources and availability of computers as major factor influencing usability of general and scholarly databases among students of Agricultural extension and education of Iran. The study sought to extent to which courses offered at the university influence usability of general and scholarly database among undergraduate students.

2.6.1 Gender and Usability of General and Scholarly Databases by Undergraduate Students at Moi University

Gender refers to the social attributes and opportunities of being male or female. In this study gender aspect was considered to determine their attitude to the use of general and scholarly databases. In a study by Ono & Zovodny (2003) on gender and the internet, women were found to use internet and Internet search engines less frequently compared to men. Further, a study by Murugathas & Chandrasekar(2014) on approach towards usability of general and scholarly databases in medical library university of Jaffna, status of clients had a major
impact towards usability of general and scholarly databases. However, the study further revealed that both sex had equal level of usability of scholarly databases.

### 2.6.2 Year of study and Usability of General and Scholarly Databases by undergraduate students at Moi University in Kenya

In institutions of higher learning we have undergraduate students from different categories’ depending on their year of study; we have the freshmen who are considered as first years, the juniors and the seniors. A study by Mbabu, Bertram and Varnum (2013) into the pattern of undergraduate students’ usability of general and scholarly databases in universities in the developed countries findings established that more than a quarter of the population of undergraduate students used general and scholarly databases for their assignments and research. This according to the study was due to structured information literacy programmes which lead to higher learning and sophisticated information searching skills, where seniors used databases less than freshmen. This supports Callinan (2005); Sivathaasan (2012) who found that freshmen undergraduate students had the highest proportion of database usability, followed by sophomores and when challenged with compound and diverse information search, senior students resort to partial search which produces lowest amount of material needed to complete a task.

### 2.7 Summary of Research Gaps

This study sought to evaluate usability and relevance of general and scholarly databases among undergraduate student at Moi University in Kenya. Several
sub-themes and objectives were examined: extent to which features of databases influence usability, needs for information and information searching activities of undergraduate students; awareness of the availability of general and scholarly databases subscribed by the university; relevance of the databases; extent to which courses offered, year of study and gender influence usability; evaluation of general and scholarly databases and challenges experiences with usability of general and scholarly databases. While many studies have examined students’ information seeking behavior and search decisions when selecting sources of information such as general and scholarly databases or when given the chance to seek out database of their choice including internet search engines, features of an ideal database that influence usability in particular were studied. In order to link the existing gap in the profession and contribute to the understanding of the factors that motivates students to the usability of general and scholarly databases.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology that was used to carry out the study. It describes the research design, location of the study, population, sampling procedure and sample size. It also highlights the instruments, data collection and analysis.

3.2 Research Design

It is human character to give details and appreciate what we study around us. The bases for understanding are differentiated by non-empirical and empirical evidences (David and Sutton, 2004). Thus in the development of this study the researcher used a combination of qualitative and quantitative approached. Quantitative data was collected using students’ questionnaires, while qualitative data was generated using interviews schedules for university librarian and e-resource librarian at Moi University, Nairobi campus in Kenya. In this study concepts were operationalized into measurable variables to collect empirical data which was then analyzed to explain the findings. By adopting a quantitative approach the researcher established the relationships among the operationalized variables.
3.2.1 Location of the Study
The study was conducted at Moi University Nairobi campus, situated at Bazar Plaza 14th floor, Moi Avenue Nairobi County, Kenya. The university was elected based on the location city and holds charter issued by commission of University Education (CUE) and established by an act of parliament. In addition, students in urban universities have a much wider range of choices in usability and relevance of general and scholarly databases resources centre’s, cyber-café’s, computer training centre’s and other elements of daily life in the city than universities in the rural.

3.3 Target Population
The population for this study was the group of individuals to which the results of the study are generalized (Mugenda & Mugenda, 2003). The population of the study constituted undergraduate students of Moi university Nairobi campus. The university admissions report indicated that the university enrolment stood at 463 undergraduate students, comprising of 264 first year students, 80 second year students, 70 third year and 49 fourth year students respectively, where 153 were male students and 310 female students. Disaggregating these data established that 33% of the students were male while 67% were female.

The study also targeted the university librarian and the e-resource librarian. This is because they are directly in charge of the students’ welfare and issues on usability and relevance of general and scholarly databases. Table 3.3 shows targeted students’ population (463) in Moi University, Nairobi campus.
Table 3.1: Undergraduate Students Enrolment at Moi University, Nairobi campus

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>101</td>
<td>163</td>
<td>264</td>
</tr>
<tr>
<td>Second Year</td>
<td>31</td>
<td>49</td>
<td>80</td>
</tr>
<tr>
<td>Third Year</td>
<td>11</td>
<td>59</td>
<td>70</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>10</td>
<td>39</td>
<td>49</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>153</td>
<td>310</td>
<td>463</td>
</tr>
</tbody>
</table>

Source: Admission department Moi University, Nairobi Camp

3.4 Sampling Techniques and Sample Size

According to Ruane (2005) sampling is the process by which a relatively small number of individuals is selected and analyzed in order to find out something about the entire population from which it was selected. Stratified random sampling technique was utilized in order to classify the respondents into various years of study and gender. This is a technique that generally provides in sample estimates according to (David and Sutton, 2004).

To realize a representative sample the students were categorized into two strata namely; year of study and gender, the categorization ensured homogenous subsets that shared the same characteristics are represented in the sample. This sample of Moi University, which has a population of 463 undergraduate students, represented 21% of the target population which is above the required
standards. The librarians were purposively sampled by virtue of the fact that they were crucial in providing information needed for the study, the study utilized 2 librarians.

Bartlet, Kotrlik & Higgins (2001) proposed a table for determining sample sizes from any given population (see appendix V). Their formula observes that as the population increases the sample size increases. From table 3.1 a population of 463 utilized a sample of 96. Simple random sampling technique was then used to determine the sample size of students per year of study and gender. Formula by Lohr (1999) was used in working out the sub-sample proportion.

\[
\text{Sample} = \frac{PS}{Q}
\]

Where P = Sub-population for each category.

S = Total sample of study (96).

Q = Total university students population (463).
Table 3.2: A Summary of the Study Sample Size

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>21</td>
<td>35</td>
<td>56</td>
</tr>
<tr>
<td>Second Year</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Third Year</td>
<td>2</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>2</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
<td>65</td>
<td>96</td>
</tr>
</tbody>
</table>

3.5 Research Instruments

Questionnaires were used to collect data from respondents. Questions asked were closed and open form. While interview schedules were used to gather data from the university librarian and librarian in charge of e-resources.

3.5.1 Students Questionnaires

Students questionnaires were used to gather information on students bio-data and extent to which features of a database (ease-of-use, usefulness, familiarity) influence usability of general and scholarly databases, extent to which awareness of general and scholarly electronic databases among undergraduate students influence usability, extent to which quality of content (relevance) influence usability of general and scholarly electronic databases among undergraduate students and extent to which courses offered influence usability
of general and scholarly database among undergraduate students at Moi university in Kenya and challenges experiences with usability.

3.5.2 Interview Schedule

The interview schedule for the librarians sought information on types of databases the university subscribes to, operations and systems of the library that promote usability and relevance of general and scholarly databases among students at the university, their views on students perception on usability of general and scholarly databases subscribed by the university and challenges experienced by students during usability process and strategies put in place to enhance usability of the databases among students.

3.5.3 Reliability of the Research Instrument

A pilot study was conducted in one public university which was not used in the study. Purpose of the piloting of the instruments was to establish the comprehensibility of each of the items in the research instrument (David and Sutton, 2004). The instrument was pre-tested to undergraduate students at Egerton university, Njoro campus Nakuru County. Egerton university was chosen because of the similar characteristics with Moi university and the universities are members of KLISC. The sample size used for the study was 10 subjects which was representative sample. This helped to make adjustments on the instrument and also establishing reliability and validity of the instrument.
3.5.4 Validity of Research Instruments

Face and content validity were determined for the instrument. According to David and Sutton (2004) face validity was established by assessing the items in the instrument and ensuring that they appear relevant and meaningful to the respondents. Content validity was determined by supervisor who looked at the items in the instrument and ascertained that the instrument contained adequate traits expected to measure the domain under study.

3.6 Data Collection

An introductory letter from Graduate School of Kenyatta University was used by the researcher to acquire a research permit (see appendix VI). This document was presented to the Nairobi County Commissioner and County Director. This enabled the researcher to secure a research authorization letter (see appendix VII) and research permit (see appendix VIII) from the National Commission for Science and Innovations (NACOSTI). These documents consequently enabled the researcher get approval to undertake research in Moi University.

The researcher then proceeded to notify the Director Moi University Nairobi campus of the intended study by direct pre-visit to the University (See appendix I) copy of introduction letter to respondents). This assured him that the information given was confidential and purely for academic use, thus any fears they might have had concerning the study was dispelled. The questionnaires described in appendix II were left with Dean of students who administered them
through the student congress leader. This was to ensure a high questionnaire response rate that could guarantee the drawing of valid inferences.

The researcher personally conducted the interviews after contacting the university librarian. The respondents were adequately briefed on how to respond to the questionnaires and were not forced to Participate in the research. Subjects’ privacy was also respected, fair and accurate reporting of research findings was also considered.

The data collected were used only for the purpose of this study and was not in any way shared with a third party. The study strictly followed the laid down procedures of conducting research and report findings objectively, as presented in the fourth chapter.

3.7 Data Analysis

This study has four objectives and five research questions; data was analyzed based on each objective (Table 3.4). The data obtained from the study was cleaned, organized and analyzed using frequency counts and simple percentages. Data cleaning was done to ensure that all the variables were captured correctly and no variables were missing. The output of analyzed data was presented in tables, graphs and pie-chart.

Conceptual analysis assisted the researcher to examine the meaning of general and scholarly databases as conceived by librarians and other stakeholders. In
addition, the approach was significant in filtering through the main features of information seeking theory as held by Wilson and human centered design on usability by Norman. This enabled the researcher relate to usability and relevance of general and scholarly electronic databases by undergraduate students. Descriptive statistics was used in the analysis of data. For objective one, simple count, frequency distribution and percentages were used in determining the extent to which features of ideal database (easy-to-use, learnability, familiarity, least effort) influence usability and relevance of general and scholarly databases among undergraduate students at Moi university. The same statistics was applied to objective two, three and four respectively. The information obtained from the interviews with the librarians was summarized and presented under common theme as guided by the objectives of the study.
<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Independent Variables</th>
<th>Dependent Variables</th>
<th>Statistical Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1: To determine extent to which features of an ideal general and scholarly databases influence usability among undergraduate students at Moi University in Kenya.</td>
<td>Features of databases</td>
<td>Usability and relevance</td>
<td>Frequency distribution, percentages</td>
</tr>
<tr>
<td>Objective 2: To establish extent to which awareness of general and scholarly databases influence usability among undergraduate students at Moi University in Kenya.</td>
<td>Awareness</td>
<td>Usability and relevance</td>
<td>Frequency distribution, percentages</td>
</tr>
<tr>
<td>Objective 3: To establish extent to which quality (content and coverage) of general and scholarly databases influence usability among undergraduate students at Moi University in Kenya.</td>
<td>Quality</td>
<td>Usability and Relevance</td>
<td>Frequency distribution, percentages</td>
</tr>
<tr>
<td>Objective 4: To determine extent to which courses offered in the university influence usability of general and scholarly electronic databases among undergraduate students.</td>
<td>Courses</td>
<td>Usability and relevance</td>
<td>Frequency distribution, percentages</td>
</tr>
</tbody>
</table>
CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents findings, interpretations and discussions of data in line with the objective of the study. This was addressed under the following subheadings—demographic characteristics of the respondents, questionnaire response rate, features of general and scholarly databases and usability among undergraduate students, awareness and usability of databases among undergraduate students, relevance and usability of general and scholarly databases by undergraduate students and courses offered and usability of databases amongst the students.

4.2 General and Demographic Information

Demographic characteristics of the sample were critical in indicating the credibility of the respondents and to provide insights into the nature of these respondents. This study had two sets of respondents namely the students and librarians. In this section, the characteristics of both respondents were presented.
4.2.1 Gender and Year of Study

Data for this study was collected within four weeks using questionnaire method. The questionnaire was administered to 96 undergraduate students, male and female of Moi University, Nairobi. Demographic characteristics of the sample were critical in indicating the credibility of the respondents and to provide insights into the nature of these respondents. The study was conducted in one public university, Moi university Nairobi campus. The choice was bases on its location city which has more privileges compared to rural university. The university is established by an Act of parliament and holds a charter issued by the Commission for University Education (CUE).

Table 4.1: Gender and Year of Study

<table>
<thead>
<tr>
<th>Gender</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>21</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>Female</td>
<td>35</td>
<td>10</td>
<td>12</td>
<td>8</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>16</td>
<td>14</td>
<td>10</td>
<td>96</td>
</tr>
</tbody>
</table>

Source: Field data (2016)

According to Table 4.1, Female students had the highest representation of the sample (65 out of 96). Male students had a sample of (31 out of 96).
4.2.2 Questionnaires Response Rate

Table 4.2: A Summary of Questionnaire Response Rate

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Questionnaires</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted</td>
<td>Returned</td>
<td></td>
</tr>
<tr>
<td>Undergraduate students</td>
<td>96</td>
<td>80</td>
</tr>
</tbody>
</table>

According to Table 4.2, there was a high questionnaire return rate of 83% by the students. Method used was drop and pick later which allowed the respondents to have ample time to fill the questionnaire without the presence of the researcher.

Figure 4.1: Summary of Gender

According to Figure 4.1, female students had the highest representation in the sample 50 out of 80, representing 63%, whereas male students were 30
representing 37%. This high representation of female students could be due to the assumption that degree programmes offered in the university are preferred by female students.

### 4.2.3 Courses offered at Moi university, Nairobi campus

The study was conducted at Moi university, Nairobi campus.

Table 4.3: Degree programmes at the University

<table>
<thead>
<tr>
<th>Grouped degree</th>
<th>No. of students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business studies</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>Public Relations</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Hospitality</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>Information Science</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Education</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Finance</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Human Resource Management</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Project Management</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Information Technology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

According to Table 4, students who take Hospitality and hotel management based degree had the high representation in the sample (25 out of 80) followed by those pursuing Business studies (19 out of 80) and Public relations (12 out of 80). This high percentage might be due to entry cluster points is lower than
sciences thus more students register for the programme or it is a course preferred by many students.

4.2.4 University Administration Staff Respondents

In order to provide a comprehensive assessment of the university’s library contribution in promoting usability and relevance of general and scholarly electronic databases among undergraduate students, university librarian and librarian in charge of e-resources were selected. This implies that staffs in the library that deal with issues concerning students were well represented in the sample.

4.3 Database Features and Usability of General and Scholarly by Undergraduate Students

The first objective of the study sought to determine the extent to which features an ideal database (ease-of-use, familiarity, least effort, social influence and experience) influence usability of general and scholarly databases among undergraduate students at Moi University Kenya. Thus in orders to achieve the first objective of the study, the respondents were asked to indicate their information need, sources of information consulted, and features of databases that influence usability of general and scholarly databases. Descriptive statistics was run on the data (see Table 4.4, 4.5 and 4.6) in order to understand their contribution within the sample.

Table 4.4: Frequency of Information Needs and Information Seeking
<table>
<thead>
<tr>
<th>Information needs</th>
<th>Access F</th>
<th>Access %</th>
<th>Undecided F</th>
<th>Undecided %</th>
<th>Total F</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>31</td>
<td>39</td>
<td>49</td>
<td>61</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Personal needs</td>
<td>42</td>
<td>53</td>
<td>38</td>
<td>47</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Academic</td>
<td>51</td>
<td>64</td>
<td>29</td>
<td>36</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Employment</td>
<td>48</td>
<td>60</td>
<td>32</td>
<td>40</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Business</td>
<td>50</td>
<td>63</td>
<td>30</td>
<td>37</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

According to Table 4.4, 64% of the students at were in agreement that information seeking is for academic databases purpose. Disagreement of the statement was expressed by 36%. Access for business was supported by 63%, Employment 60% and personal needs at 42% respectively. This demonstrates that students will seek for information from the databases to satisfy their academic needs. This supports Chowdhury (2003); Wilson (1991) who states that ‘the process of information searching begins with a user’s information need, and that users of these information vary in terms of their information needs, characteristic and capabilities’. To fulfill these needs students consult information sources and systems which include general and scholarly databases.
Table 4.5: Frequency of General and Scholarly databases Consulted

<table>
<thead>
<tr>
<th>Sources Consulted</th>
<th>Accessed</th>
<th></th>
<th>Undecided</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Google.com</td>
<td>24</td>
<td>30</td>
<td>56</td>
<td>70</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>40</td>
<td>50</td>
<td>40</td>
<td>50</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>General Databases</td>
<td>30</td>
<td>37</td>
<td>50</td>
<td>63</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Scholarly database</td>
<td>31</td>
<td>39</td>
<td>49</td>
<td>61</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>5</td>
<td>76</td>
<td>95</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

According to Table 4.5, 50% of the respondents were in agreement that they consulted Google scholarly for their information and research needs. However, the same statement was not supported by 50% of the students. In addition, 39% used Scholarly databases, 37% preferred to use general databases, whereas 30% opted for Google .com. However, 5% of the respondents opted to consult other sources such as Bing.com and yahoo.com.

These findings were supported by the e-resources librarian, who said the following in a personal conversation with the researcher:

“Undergraduate students are beginning to appreciate scholarly databases such as Google scholar even though they prefer usability of internet search engines, and sooner than later more will appreciate the databases subscribed by the university”
Table 4.6: Students views on Databases Features influencing Usability

<table>
<thead>
<tr>
<th>Variable</th>
<th>Database Features</th>
<th>Yes</th>
<th>No</th>
<th>Undecided</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Ease of use</td>
<td></td>
<td>51</td>
<td>64</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Familiarity</td>
<td></td>
<td>40</td>
<td>50</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td>40</td>
<td>50</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>Least effort</td>
<td></td>
<td>36</td>
<td>45</td>
<td>22</td>
<td>27</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td>39</td>
<td>49</td>
<td>27</td>
<td>34</td>
</tr>
</tbody>
</table>

According to Table 4.6, 64% of the students in the university were in agreement that ease-of-use influence usability. Disagreement of the statement was expressed by only 19%. Familiarity and experience was supported by 50% respectively. In addition, these findings were supported by e-resources librarian in the university who said the following:

“Students prefer easy-to-use systems, where least effort is applied and experience with the system when accessing information from general and scholarly databases, that is the reason majority of students access information from databases such as Google and Google’. Students consider these databases easy to use and not as complex as databases subscribed by the library”.

This predication for ease of use, familiarity and experience as a motivation in usability of general and scholarly databases is consistent with a study by Xie (2004). Further, this corroborates with Tanackovic et al. (2016) that students are
always willing to access and use scholarly databases if properly guided and trained.

4.4 Awareness of general and scholarly databases and usability by students in Kenya

The second objective of the study sought to establish the extent to which awareness of general and scholarly electronic databases influence usability among undergraduate students at Moi university in Kenya. Thus in orders to achieve the second objective of the study the test items were split into two. The first set was requesting respondents to state whether they were aware of existence of general and scholarly database in the university, while set two was to mention source of awareness. The results are as indicated in the tables 4.6 and 4.7 respectively.

Table 4.7: Frequency of Awareness of general and scholarly databases

<table>
<thead>
<tr>
<th>Databases</th>
<th>Awareness</th>
<th>Not Aware</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>Sage</td>
<td>5</td>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>AGORA</td>
<td>1</td>
<td>1</td>
<td>79</td>
</tr>
<tr>
<td>HINARI</td>
<td>9</td>
<td>11</td>
<td>71</td>
</tr>
<tr>
<td>JSTOR</td>
<td>7</td>
<td>9</td>
<td>73</td>
</tr>
<tr>
<td>EBSCO</td>
<td>5</td>
<td>6</td>
<td>75</td>
</tr>
</tbody>
</table>

According to Table 4.7, 11% of the students in the university were aware of the availability of HINARI databases, 9% aware of JSTOR databases, 6% EBSCO and Sage databases respectively, only 1% knew of the existence of AGORA
databases. Findings indicate that over 90% of the respondents are not aware of the databases available in the university. These findings demonstrate that either the librarians in the university are not promoting their services and products or the students are not interested in what the library is offering and have decided to use other sources of information such as the internet. However, during a personal conversation with the e-resource librarian, it was clear that awareness of services and product offered in the library was a continuous exercise.

Table 4.8: Source of Awareness of General and Scholarly Databases

<table>
<thead>
<tr>
<th>Source</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Library orientation</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Library brochures</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Friends</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Notices</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Undecided</td>
<td>44</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

According to Table 4.8, 19% of the respondents source about the existence of general and scholarly databases from their lecturers, 13% from friends, 6% from the librarians. This trend demonstrated librarians are not pro-active in promoting library services and products. It can also be urged that students consider their lecturers as a more authoritative source of information than when the information is passed through librarians. These findings are further
supported by Kwadzo, (2015) whose studies observed that majority of students’ source of information on the availability of general and scholarly databases is through their lecturers and majority accessed the databases from the central library. On the other hand Agaba (2005) opines that knowledge of availability of general and scholarly can also be achieved by attending workshops and seminars, through notice boards, electronic mail and use of mailing list.

4.5 Relevance of General and Scholarly Databases and Usability by students in Kenya

The third objective of the study set to establish extent to which quality (content and Coverage) of general and scholarly electronic databases influence usability among undergraduate students at Moi university. In order to analyze the data addressing the objective there two sets of questions, the first set requested the respondents to state how often they visit the library and where the students access general and scholarly electronic databases. The second set of questions requested the respondents to indicate how much of their time is spent accessing and retrieving information from general and scholarly databases subscribed by the university. Simple counts and percentages were used to establish frequency of library visits as indicated in Table 4.8.
Table 4.9: Frequency of Library Visits

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyday</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Weekly</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>Monthly</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Never</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

The findings from the above table reveal that 20% of the students visited the library everyday, 34% visited on weekly basis, 12% visited on monthly basis and 34% of the student respondents never visited the library at all. This shows that majority of undergraduate students are running away from the library and the provided therein, which means that the students are using other sources of information such as the internet and other search engines to achieve their academic goals. This should indeed be a threat to librarians who should come up with strategies to reverse this trend.

Data was also sought to establish where students’ access general and scholarly databases, list of choices were provided where the respondents were requested to respond appropriately, descriptive statistics was carried out on the data. The results are as shown in Figure 4.2
According to Figure 4.2, 34% of the students’ access general and scholarly databases from the library, approximately 14% access the databases from their homes, 2% use the databases from their hostels, 35% use hotspot area and 15% undecided. This suggests that when students are conducting research or assignments, library and hotspot areas in the university are the best option. This is consistent with Agaba (2005) & Kwadzo (2015) whose studies found that students who use general and scholarly electronic databases for research and authorship prefer library facilities such as computers and the conducive environment.
Data was also sought to establish extent of usability of general and scholarly electronic databases subscribed by the university which included (Jester, HINARI, Small Business, e-grannary and Phil papers) among undergraduate students at Moi University in Kenya. The students were asked to rate using percentages, where 0-50% = low usability, 51-100% high usability. The results are shown in Table 4.9

Table 4.10: Usability of General and Scholarly Databases

<table>
<thead>
<tr>
<th>General and Scholarly Databases</th>
<th>0-50% F</th>
<th>0-50% %</th>
<th>51-100% F</th>
<th>51-100% %</th>
<th>Never used F</th>
<th>Never used %</th>
<th>Total F</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jester</td>
<td>24</td>
<td>30</td>
<td>13</td>
<td>16</td>
<td>43</td>
<td>54</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>HINARI</td>
<td>22</td>
<td>11</td>
<td>11</td>
<td>14</td>
<td>47</td>
<td>59</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Small Business</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>24</td>
<td>42</td>
<td>52</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>e-granary</td>
<td>22</td>
<td>11</td>
<td>11</td>
<td>14</td>
<td>47</td>
<td>59</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Phil Papers</td>
<td>21</td>
<td>14</td>
<td>14</td>
<td>18</td>
<td>45</td>
<td>56</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

According to Table 4.10, 16% of the respondents preferred Jester databases to access information, 14% HINARI, 24% who were the majority Small Business databases, 14% e-granary whereas 18% consulted Phil papers databases. The table also shows that over 50% of the respondents have never consulted the databases at all. This could be that the databases are too complex for the students' usability in terms of ease-of use, terminology and familiarity, thus driving the students to using other databases such as Small Business Resource databases and internet search engines. A study on awareness and utilization of
AGORA e-resource databases by Agricultural undergraduate students of Ebonyi state university Abakaliki, Nigeria, showed that 75% of the students in faculty of fisheries are aware of the existence of AGORA online databases. Soils department was the least aware with 20%. This poor awareness will definitely affect the level of usability (Otubelu, 2017).

Data was also analyzed to determine quality of content and subject coverage of the database. In order to analyze the data students were provided with a list items and asked to rate the value of general and scholarly databases subscribed by the university. Results are as shown in Table 4.10

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very irrelevant</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Irrelevant</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Somewhat irrelevant</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Relevant</td>
<td>30</td>
<td>37</td>
</tr>
<tr>
<td>Very relevant</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Do not know</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

According to Table 4.11, 37% of the students opined that the databases are relevant, 14% indicated that the databases were very irrelevant, 3% indicated that the databases are very irrelevant. This is an indication that general and
scholarly electronic databases the university subscribes to are not performing the task of satisfying users’ research, authorship and educational needs. This is consistent with Martin (2008) study on information seeking skills of undergraduate students’ findings indicate that majority of students believe that information retrieved from internet search engines in credible and relevant than information retrieved from general and scholarly databases. Likewise Tanackovic et al. (2016) findings reveal that students will give preference to convenience and least effort resources and accept materials of lower quality or reliability.

Data was also analyzed to determine extent of usability of search engines such as Google.com, Bing.com, Yahoo.com and other internet search engines. The results were as summarized in Table 4.12.

Table 4.12: Usability of Internet Search Engines

<table>
<thead>
<tr>
<th>Search Engine</th>
<th>0-50%</th>
<th>51-100%</th>
<th>Undecided</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google.com</td>
<td>F</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>Bing.com</td>
<td>23</td>
<td>29</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Yahoo.com</td>
<td>13</td>
<td>16</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

According to Table 4.12, 65% of the respondents’ use Google, 48% consult Yahoo.com. 35% prefer Bin.com.
These findings were supported by the university librarian who said the following in a personal conversation with the researcher:

“The university subscribes to general and scholarly electronic databases where huge budgets are spent. However, the databases are underutilized because students prefer internet search engines for their research and assignment”.

These findings further support a study by Brophy & Bawden (2005) that Google has revolutionized how students access and use electronic databases. Students are leaning towards simplicity and time saving access and retrieval of information.

Further, analysis was done to determine extent of relevance of search engines in supporting students’ information needs. To analyze this data students were given a list of items and asked to rate the extent to which they agree with the set of given statements (very irrelevant, irrelevant, somewhat relevant, very relevant, do not know). The results were as summarized in Table 4.12
Table 4.13: Relevance of Information Retrieved from Internet Search Engines

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very irrelevant</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Irrelevant</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat irrelevant</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Relevant</td>
<td>35</td>
<td>44</td>
</tr>
<tr>
<td>Very relevant</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Do not know</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

According to Table 4.13, quality of information retrieved from internet search engines was supported by 44% of the respondents; only 2% indicated information retrieved from the internet search engines was not relevant. This trend demonstrates that the principle of least effort and familiarity is preferred by students when using general and scholarly databases. Further, these findings are supported by Rempel, Buck & Deitering (2013) who states that students will choose general and scholarly electronic databases based on their understanding and familiarity of the sources of information.
4.6 Courses offered and Usability of General and Scholarly Databases by Undergraduate students in Kenya

The fourth objective was to establish extent to which degree programmes offered at the university influence usability of general and scholarly electronic databases among undergraduate students. The respondents were provided with a list of general and scholarly databases presume to have subscribed by the university library and awareness created on their availability. The students were asked to indicate type of degree pursued and databases of their choice, the respondents were allowed to indicate more than one databases. The results are indicated in Table: 4.14.

Table 4.14 Courses offered and Usability of General and Scholarly Databases

<table>
<thead>
<tr>
<th>Variable</th>
<th>Google N</th>
<th>F</th>
<th>%</th>
<th>Google Scholar N</th>
<th>F</th>
<th>%</th>
<th>General Databases N</th>
<th>F</th>
<th>%</th>
<th>Scholarly Databases N</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Management</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Hospitality</td>
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</tr>
<tr>
<td>Information Technology</td>
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<tr>
<td>Human Resource</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Communication and Public</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Finance</td>
<td></td>
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<tr>
<td>Economics</td>
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</tr>
<tr>
<td>Project Management</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Information Science</td>
<td></td>
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<td></td>
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<tr>
<td>Education</td>
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<td></td>
</tr>
</tbody>
</table>

66
According to Table 4.14, usability of Google scholar, scholarly database and General databases was higher among students pursuing Education, Information Technology, Finance and Human Resource, 100% respectively. This is an indication that if students are properly guided on usability of general and scholarly database and features of ideal databases, their potential of performing a task and achieving their goals will be realized.

Further analysis was done to establish impact of year of study on usability of general and scholarly databases. Thus, to establish the impact a list of statements that database features that motivate usability of general and scholarly databases was provided to the students to indicate features that influence their usability. The results are indicated in Table 4.15.

Table 4.15: Features of Databases that Influence Usability of General and Scholarly Database

<table>
<thead>
<tr>
<th>Usability Factors</th>
<th>Year one</th>
<th>Year two</th>
<th>Year three</th>
<th>Year four</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>N=44</td>
<td>N=12</td>
<td>N=14</td>
<td>N=10</td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>23</td>
<td>11</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Familiarity</td>
<td>17</td>
<td>16</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Experience</td>
<td>18</td>
<td>15</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Social influence</td>
<td>18</td>
<td>15</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Least effort</td>
<td>17</td>
<td>10</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
According to Table 4.15, 23 out of 56 first year respondents indicated that ease-of-use is the major feature of database that influence usability, 10 out of 12 of second year students also agreed that ease-of-use as a major factor that influence usability, on the other hand 12 out of 14 of third year student confirmed the statement and 6 out of 10 of fourth year students agreed that ease of use influence usability. Other features of an ideal databases such as familiarity, experience and social influence were also considered to influence usability of the databases among undergraduate student with the lowest being 5 out of 10 fourth year students indicated least effort to be the least determining feature of databases that influence usability. The predication of ease of use is consistent with studies by Brophy & Bawden (2005); Tanackovic et al. (2017) on usability of internet search engine with academic library resources. Findings indicate that Google search engine is widely used among undergraduate students because of it is perceived to be user friendly and easy to use and less complex.

Further analysis was done to establish general and scholarly databases accessed as per year of study. To analyze this data a list of general and scholarly databases where provided and students asked to indicate databases accessed and used to satisfy their educational and research needs. Summary is as indicate in Figure 4.3
According to Figure 4.3, 20% of year one students indicated that they prefer Google scholar, 7% second and third year used Google scholar, 6% of fourth year students used Google scholar respectively, an indication that majority of the students preferred Google scholar to other databases. The least preferred database general databases and use of Google.com. The high representation by first year students might be because of the trainings and orientation programmes that the university offers during first year of academic semester.

**4.6.1 Gender and usage of general and scholarly databases**

Gender refers to the shared attributes and opportunities of being male or female. In this study gender aspect was considered to determine their motivation on usability of general and scholarly databases. Thus further data was analyzed to
determine extent to which gender influence usability of general and scholarly databases. This variable was measured by asking the respondents various statements describing their perception on usage of general and scholarly databases. The frequency of visits to the library and sources of information accessed as presented in the Figure 4.4 and Table 4:15 respectively.

According to Figure 4.4, 9% of male students visited the library everyday compare to 7% of the female students. The figure also shows that 17% of female students never visited the library compared to 10% of the male students. This trend by students by passing library product and services demonstrates that librarians are neither promoting the library and services offered nor students believe that services offered in the library can be provided elsewhere without physically being in the library.
According to Table 4.16, 31% of male students prefer Google, compared to 33% female students. 30% of male students indicated that they use Google scholar, whereas 31% of female students use Google scholar. This trend indicated no major difference in usability of general and scholarly databases by gender.
4.7 Challenges and Usability of General and Scholarly Databases

Further analysis was done to establish challenges associated with usability of general and scholarly electronic databases that hinder students from successfully completing a task. Thus to achieve this undergraduate students were asked to list challenges they experience when accessing and using the databases.

4.8 Summary of Challenges

Difficulty involved in performing search tasks and accessibility of document content. General and scholarly databases is all about content, if content has errors, students may be incapable of using the databases since much of their navigation is content driven.

Challenges of students not being able to identify their information need, query formulation and unfriendly user interface features such as language of the interface with options of using more than one language, options for navigation and screen features including color. In addition, difficulty to decide which database to access because of the number of journals and databases covered in a given subject, off campus searching was also indicated as a challenge, the process is time consuming and frustrating because of low bandwidth.

When performing searches and retrieval of information from general and scholarly databases too many hits are produced, making it difficult for the
students to determine what is relevant and what is not relevant. This is in line with Oyieke (2010) who identified the major challenges for effective usability of general and scholarly electronic databases by undergraduate students in institutions of higher learning in Kenya, as poor and unreliable Information and Communication Technology, issues of software and content, unreliable power supply, students unaware of what is available and apathy among undergraduate students.
CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses the summary of the findings of usability and relevance of general and scholarly electronic databases among undergraduate students at Moi University in Kenya. These findings are tied to the objectives of the study conclusions and recommendations have been drawn after comparing findings of the study and earlier related studies.

5.2 Summary of the Findings

The summary has been done in relation to the objectives of the study and in reference to undergraduate students of Moi university Nairobi campus.

5.2.1 Features of Databases and Usability of General and Scholarly Databases among undergraduate Students

The findings under section 4.3 of the study showed 64%of the students sought for information for academic and business related issues. Database most consulted Google scholar at 60%. This implies that undergraduate students are familiar with the database and find the database easy to use.

The findings further showed that features of an ideal database (ease-of-use, familiarity and experience) influenced usability of general and scholarly
databases. Computer skills were indicated as a major requirement in the effective navigation of the databases.

5.2.2 Awareness and Usability of General and Scholarly Electronic Databases

Findings under section 4.4 of the study showed that only 11% of the students were aware of the availability of general and scholarly databases subscribed by the university. In addition, source of information on the availability of general and scholarly databases was through their lecturers and friends. 24% of the students were aware of Small Business a database, which was the majority. This implies that librarian played a minimal role in creating awareness of the availability of the databases to the students.

5.2.3 Relevance and Usability of General and Scholarly Electronic Databases

Findings under section 4.5 of the study established a significant difference between relevance of content of general and scholarly databases and internet search engines. In this regard, 44% of the students held that information retrieved from internet search engine produced relevant results compared to 3% of the students who indicated that general and scholarly databases subscribed by the university library contained relevant information.

The findings further showed that 35% of the students preferred hot spot areas when accessing and using general and scholarly databases, followed closely by
the library at 34%. The findings also established that students preferred database small business database with 24%. In addition, 65% indicated ease of use as a motivating factor of usability of general and scholarly database among the students.

5.2.4 Course offered and Usability of General and Scholarly Databases
The findings under section 4.6 showed usability of Google scholar, scholarly database and General databases was higher among students pursuing Education, Information Technology, Finance and Human Resource, 100% respectively no major difference in the percentages between the courses offered in the university and usability of general and scholarly databases. This implied that the courses offered influence equal usability of general and scholarly database.

5.2.5 Gender and Usability of General and Scholarly Databases
The findings on gender and usability of general and scholarly databases showed that there were significant differences in usability of databases between the genders. In addition, factors that influence usability were common to both female and male students.

5.2.6 Challenges faced when accessing and using general and scholarly databases
A further analysis to determine challenges experienced among undergraduate students with usability and relevance of general and scholarly databases established the following;
Difficulty involved in performing search tasks and to the accessibility of document content, students unable to specify what they need in terms of information needs.

Further, challenges associated with students experiencing difficulty in deciding which database to access or select because of the number of journals and databases covering a given subject.

In addition, other challenges such as low bandwidth, lack of awareness of the availability of general and scholarly electronic databases and finding relevant information from the databases. These were the major challenges’ hindering usability of general and scholarly databases.

5.3 Conclusion

The study established that features of an ideal database ease of use, familiarity, experience, learnability and least effort influenced usability of general and scholarly databases. It can be concluded that features of an ideal database ease of use, familiarity, experience, learnability and user-friendly influence usability of general and scholarly databases among undergraduate students, thus satisfying their information needs.

The study also established that usability of databases were influences by awareness of general and scholarly databases, the study established that students were not aware of the availability of the databases. It can be concluded
that librarians were not pro-active in creating awareness of general and scholarly databases among undergraduate students. It can further be concluded that the methods applied by the library in promoting and creating awareness of availability of general and scholarly databases is outdated and not effective.

Concerning relevance of general and scholarly electronic databases in supporting students’ information needs. The study established that general and scholarly electronic databases subscribed by the university perceived by the librarians as of quality and authoritative, where considered irrelevant by student. It can be concluded that though the subscribed databases are of quality in content and subject proximity their ease of use, familiarity and learnability is complex consequently, students are unable to determine quality of the databases.

In regards to year of study, gender and courses offered, findings leads to the conclusion that features of an ideal database (ease of use, familiarity, learnability and experience) plays a major role in motivating students usability of general and scholarly databases regardless of year of study and courses offered.

Lastly, concerning challenges experiences by students with usability of general and scholarly electronic databases, it can be concluded from the findings of this study that difficulty involved in performing search tasks, awareness and accessibility of document content as challenges experienced by students
General and scholarly databases is all about content, if content has errors, students may be incapable of using the databases since much of their navigation is content driven.

Identification of information needed to accomplish a task; query formulation, options for navigation and screen features including color were also established as challenges experienced by undergraduate students with usability of general and scholarly databases.

In addition, difficulty to decide which database to access, this is in connection with the number of journals and databases covered in a given subject, off campus searching was also indicated as a challenge, the process is time consuming and frustrating because of low bandwidth and Apathy among students. Consequently, these challenges negatively impacted on usability and relevance of general and scholarly databases.

5.4 Recommendations

The following recommendations are made in terms of policy, features of databases, relevance of general and scholarly databases, awareness and how to influence usability of general and scholarly database through the library policy.
5.4.1 Policy Recommendations

i) University libraries should capture features of an ideal database in their policies and strategic plans. Promotions and awareness of usability of databases should be applied and integrated in university and library activities. For example open-days, open access training, user education and any other students forum.

ii) Features of ideal general and scholarly databases, formulation of searches, search skill and navigation skills should be captured in the common course courses offered in the university such as communication skills.

iii) In relation to awareness of general and scholarly databases, the library should develop modern methods of marketing and promotion of databases. For instance, use of social media where students are found

iv) With regard to relevance of general and scholarly electronic databases, libraries and librarians should develop an evaluation criteria that will guide on how assess quality of content of the databases and ensure that the databases subscribed are suitable for its intended users.

v) In relation to usability of general and scholarly databases, the library should ensure that the databases have the ability to satisfy students’ information and research needs, organizing regular digital and information literacy training, a stop window approach where
students can see and use only one search interface to search
information from a variety of databases.

vi) Online help to guide students, database vendors should develop user
manual that guide students on usability processes and procedures.

vii) Awareness of the availability of general and scholarly databases
should be promoted through seminars and workshops organized by
the university.

5.4.2 Recommendations for Further Research

This study suggests the following areas for further research:

i) Given that the study focused on features of databases, awareness,
relevance and courses offered. There are other important factors and
stakeholders such as database vendors. The current research
therefore leaves space for further inquiries into the role of other
stakeholders and factors that influence usability of general and
scholarly databases in the university.

ii) Given that the study dwelt on establishing extent to which relevance
influence usability of the databases, there is need to determine the
role of KLISC in promoting usability of general and scholarly
databases.
REFERENCES


APPENDICES

Appendix I: A Letter of Introduction

Ms. Rose Okumu

Kenyatta University
Department of Library Science
Nairobi

Moi University
P.O. Box
Nairobi.

Dear Respondent,

RE: Research study on Usability and Relevance of General and Scholarly Electronic Databases by Undergraduate students

I am a post-graduate student at Kenyatta University, Nairobi Campus pursuing a Masters of Education Degree in Library and Information Science. I’m conducting a research study on usability and relevance of general and scholarly databases by undergraduate students, in order to determine level of acceptance of the databases and factors that motivate students to accept and use these databases you have been selected to take part in the study. I would be grateful if you would assist me by responding to all the items in the attached questionnaire as honestly as possible. Your response will be treated with utmost ethical consideration which include respondent confidentiality, privacy, not harming the respondent physically or psychologically, getting informed consent from the respondent by explaining the of information required, how the information will be used and that the research findings will not be concealed but disseminated after conclusion of the study.

Yours sincerely

Rose Okumu
Appendix II: Students’ Questionnaire

You are kindly requested to read this questionnaire carefully and then complete it as honestly as possible. The information given will be strictly confidential and used only for academic purpose.

SECTION 1: Students Demographic Information

Instructions: Please tick the box next to correct answer.

1. Name of Department ____________________________________________

2. What is your gender?

   Male [ ] Female [ ]

3. Please indicate your year of study

   First [ ] Second [ ] Third [ ] Fourth [ ]

4. Field/Area of study (e.g. Education, Economics, business studies e.t.c)

   ____________________________________________
SECTION 11: Information on which Features of an ideal database influence usability and relevance among undergraduate students

INSTRUCTIONS: Tick as appropriate and fill in the blanks where choices have not been given.

On a scale of 1-5 with 5 being the most positive.

5. What kind of information do you search for when using general and scholarly electronic databases?

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Information needed</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>(i)</td>
<td>Health</td>
<td></td>
</tr>
<tr>
<td>(ii)</td>
<td>Information for personal development</td>
<td></td>
</tr>
<tr>
<td>(iii)</td>
<td>Academic information</td>
<td></td>
</tr>
<tr>
<td>(iv)</td>
<td>Employment information</td>
<td></td>
</tr>
<tr>
<td>(v)</td>
<td>Business information</td>
<td></td>
</tr>
</tbody>
</table>

On a scale of 1-5 with 5 being the most positive

b) Which sources of information sources do you consult for the above information? (e.g. Google scholar, Google, scholarly databases, general databases e.t.c)

<table>
<thead>
<tr>
<th>S/NO.</th>
<th>SOURCES OF INFORMATION</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>i</td>
<td>Google</td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Google scholar</td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>General databases</td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Scholarly databases</td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

c) Level of ICT kills
Are you skilled in the areas listed below?

<table>
<thead>
<tr>
<th>S/NO</th>
<th>ITEM</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>Are you skilled in the use of computers?</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>(ii)</td>
<td>Are you skilled in the knowledge of database structure?</td>
<td>Yes</td>
</tr>
<tr>
<td>(iii)</td>
<td>Are you skilled in formulating search strategies?</td>
<td>Yes</td>
</tr>
<tr>
<td>(iv)</td>
<td>Are you skilled in on-line navigation techniques?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

d) Which database features influence you to use general and scholarly databases?

<table>
<thead>
<tr>
<th>S/NO</th>
<th>ITEM</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>Ease of use</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>(ii)</td>
<td>Familiarity</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>(iii)</td>
<td>Experience</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>(iv)</td>
<td>Social influence</td>
<td>Yes</td>
</tr>
<tr>
<td>(v)</td>
<td>Least effort</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>
Section III: The extent to which awareness services offered in the library influence usability of general and scholarly electronic databases among students at Moi university in Kenya.

6. Are you aware of general and scholarly electronic databases?
   Yes [ ] No [ ]

7. If, Yes list 3 general and scholarly electronic databases?
   (i) …………………………………………………………………………………
   (ii) ………………………………………………………………………………….
   (iii) ………………………………………………………………………………….

8. Are you aware of the following general and scholarly electronic databases subscribed by your university?
   (i) SAGE [ ]
   (ii) AGORA [ ]
   (iii) HINARI [ ]
   (iv) JSTOR [ ]
   (v) EBSCO [ ]
   (vi) ProQuest [ ]
   (vii) THE ROYAL SOCIETY [ ]
   (viii) OTHERS
         (Specify)………………………………………………………………

9. If you are aware how did you know of the availability of general and scholarly databases subscribed by you university?
   (i) Lecturer [ ]
   (ii) Library orientation [ ]
   (iii) Library brochures [ ]
   (iv) Friends [ ]
   (v) Notices [ ]
   (vi) Others( please specify)……………………………………………………
Section IV: Extent to which quality of general and scholarly electronic databases influence usability of general and scholarly databases amongst undergraduate students at Moi university in Kenya

10. How often do you access and use general and scholarly electronic databases?
   Everyday [    ]       weekly [    ]       monthly [    ]       never [    ]

11. Where do you access general and scholarly electronic databases?

   (i) Library
   (ii) Home [    ]
   (iii) Wireless connectivity [    ]
   (iv) Hostels [    ]
   (v) Others please specify…………………………………………………………

12. If never, list reasons that prevent you from using general and scholarly electronic databases subscribed by your university?

   ………………………………………………………………………………………………………

13. On a scale of 0% – 100%, how much of you full time do you use the following general and scholarly electronic databases subscribed by your university?

   

<table>
<thead>
<tr>
<th></th>
<th>0% - 10%</th>
<th>11%-25%</th>
<th>26%-50%</th>
<th>51%-75%</th>
<th>76%- 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jester</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HINARI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>egranary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phil papers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. How do you rank the value of the above Scholarly electronic databases subscribed by your university on conducting your research and in satisfying your information needs?

<table>
<thead>
<tr>
<th>Very irrelevant</th>
<th>Irrelevant</th>
<th>Somewhat irrelevant</th>
<th>Relevant</th>
<th>Very relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

15. On a scale of 0% - 100%, how would you rate your overall usability of the following search engines?

<table>
<thead>
<tr>
<th>Internet search engines</th>
<th>0%-5%</th>
<th>6%-25%</th>
<th>26% - 50%</th>
<th>51% -75%</th>
<th>76% -100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bing.com</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Yahoo.com</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**On a scale of 1 – 5 with 5 being the most positive.**

16. How do you rate the quality of information retrieved from above internet search engines in satisfying your information needs?

<table>
<thead>
<tr>
<th>Very irrelevant</th>
<th>Irrelevant</th>
<th>Somewhat irrelevant</th>
<th>Relevant</th>
<th>Very relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Section IV: Challenges experiences and usability of general and scholarly databases

17. What challenges do you experience when using and accessing information from general and scholarly electronic databases subscribed by your University?
   (i)
   (ii)
   (iii)
   (iv)
   (v)
   Others
   specify………………………………………………………………………………
   ……………………………………………..

18. What challenges do you face when accessing information from other internet search engines such as Google?
   (i)
   (ii)
   (iii)
   (iv)
   (v)
   Others………………………………………………………………………………
On a scale of 1 – 5 with 5 being the most positive.

Section V: Extent of satisfaction with usability and relevance of general and scholarly electronic databases amongst undergraduates students at Moi university in Kenya

19. How would you rate your overall satisfaction with general and scholarly electronic databases subscribed by your university?

<table>
<thead>
<tr>
<th>Strongly dissatisfied 1</th>
<th>Dissatisfied 2</th>
<th>Slightly dissatisfied 3</th>
<th>Satisfied 4</th>
<th>Strongly satisfied 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent are you satisfied with usability of general and scholarly electronic databases</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION V - TRAININGS

20. Does the library provide trainings on usability of general and scholarly electronic database?

Yes [ ] No [ ]

a) If YES. How was the training done?
   (i) Information literacy programmes [ ]
   (ii) Distribution of library brochures [ ]
   (iii) Library Orientation [ ]
   (iv) Library tour [ ]

b) Are you happy with the way the library assists students with usability of general and scholarly electronic databases?
Yes [ ] No [ ]

(b) If NO, what would you suggest for improvement in the usability of general and scholarly electronic databases?

..........................................................................................................................................................
Appendix III: Interview Schedule for University Librarian

I am a Masters Degree student in the Department of Library and Information Science at Kenyatta University gathering information to establish usability and relevance of general and scholarly electronic databases among undergraduate students at Moi University, Nairobi campus. Your knowledge as the librarian in the university will be of great value to this study. Kindly feel free to answer these questions to the best of you knowledge. The information gathered through this interview schedule will be used for purpose of of this study only and will be treated with strict confidentiality.

Please fill in the spaces provided or [    ] where it is appropriate

Section A: Personal Information

1. Name of your university: …………………  Location: …………………
2. Gender:     Male………………………….     Female:  ………………………
3. Employment status:     Permanent …………    Contract …………………

Section B: Information on usability and Relevance of General and Scholarly databases

1. What library services do you offer to the students?

.............................................................................................................................
2. Are you familiar with general and scholarly electronic database?

.............................................................................................................................
3. Which general and scholarly databases do you subscribe for you students?

.............................................................................................................................
4. How would you rate the potential of the databases in accomplishing the
goals of your students? Very Good [  ] Good [ ] Average [ ] Fair [ ] Poor [ ]

4 What factors do you think hinder effective usability of general and scholarly electronic databases among students?

.................................................................................................................................

6 How do you create awareness of general and scholarly electronic database available in the library?

.................................................................................................................................

7 Are the databases subscribed by the library relevant for the intended users?

.................................................................................................................................

8 What would you like to see happen at Moi University Library in its role of promoting usability and relevance of general and scholarly electronic databases among undergraduate students?
Appendix 1V: Interview Schedule for e-Resource Librarian

I am a Masters Degree student in the Department of Library and Information Science at Kenyatta University gathering information to establish usability and relevance of general and scholarly electronic databases among undergraduate students at Moi University, Nairobi campus. Your knowledge as the librarian in the university will be of great value to this study. Kindly feel free to answer these questions to the best of you knowledge. The information gathered through this interview schedule will be used for purpose of of this study only and will be treated with strict confidentiality.

Please fill in the spaces provided or [    ] where it is appropriate

Section A: Personal Information

1. Name of your university: ………………… Location: …………………
2. Gender: Male…………………………. Female: ………………………
3. Employment status: Permanent ………… Contract …………………

Section B: Information on usability and Relevance of General and Scholarly databases

2. What library services do you offer to the students?

.................................................................

2. Are you familiar with general and scholarly electronic database?

.................................................................

3. Which general and scholarly databases do you subscribe for your students?

.................................................................

4. How would you rate the potential of the databases in accomplishing the
goals of your students?  Very Good [ ] Good [ ] Average [ ] Fair [ ] Poor [ ]

5 What factors do you think hinder effective usability of general and scholarly electronic databases among students?

6 How do you create awareness of general and scholarly electronic database available in the library?

7 Are the database s subscribed by the library relevant for the intended users?

8 What would you like see happen at Moi university library in its role of promoting usability and relevance of general and scholarly electronic databases among undergraduate students?
Appendix V: Sample Sizes (S) Required For Given Population

<table>
<thead>
<tr>
<th>Population size</th>
<th>Sample size</th>
<th>Continuous data (margin of error = .03)</th>
<th>Categorical data (margin of error = .05)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>alph =.10</td>
<td>alph =.05</td>
<td>alph =.01</td>
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<tr>
<td></td>
<td>t = 1.65</td>
<td>t = 1.96</td>
<td>t = 2.58</td>
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<td>100</td>
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<td>96</td>
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<td>2000</td>
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<tr>
<td>6000</td>
<td>83</td>
<td>119</td>
<td>209</td>
</tr>
</tbody>
</table>

Source: Bartlet, Kotrlik and Higgins
Appendix VI: Letter of Introduction from Kenyatta University Graduate School

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 87530

Our Ref: E65/CE/20700/12
DATE: 15th August, 2016

Director General,
National Commission for Science, Technology & Innovation
P.O. Box 30623-00100,
NAIROBI

Dear Sir/Madam,


I write to introduce Ms. Rose Okumu who is a Postgraduate Student of this University. She is registered for M.Ed degree programme in the Department of Library & Information Science.

Ms. Okumu intends to conduct research for a M.Ed. Proposal entitled, “Evaluation of Usability and Relevance of General Scholarly Electronic Databases by Undergraduate Students: Case Study of Moi University, Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

25 AUG 2016
Appendix VII: Research Authorization Letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2215471,
224459, 3310377, 2219428
Fax: +254-20-318245, 318249
Email: dig@nacost.co.ke
Website: www.nacost.co.ke
When replying, please quote:
Ref. No. NACOST/P/16/45088/13474

Date: 4th October, 2016

Rose Akinyi Okumu
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Evaluation of usability and relevance of general and scholarly electronic databases by undergraduate students: Case of Moi University,” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for the period ending 3rd October, 2017.

You are advised to report to the Vice Chancellor, Moi University, the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in PDF of the research report/thesis to our office.

Boniface Wanyama
FOR: DIRECTOR-GENERAL/CEO

Copy to:
The Vice Chancellor
Moi University.

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

National Commission for Science, Technology And Innovation is ISO 9001:2008 Certified
Appendix VI: Research Permit

THIS IS TO CERTIFY THAT:

MS. ROSE AKINYI OKUMU

of KENYATTA UNIVERSITY NAIROBI,

0-20190 Nakuru, has been permitted to

conduct research in Nairobi County

on the topic: EVALUATION OF

USABILITY AND RELEVANCE OF

GENERAL AND SCHOLARLY ELECTRONIC

DATABASES BY UNDERGRADUATE

STUDENTS: CASE OF MOI UNIVERSITY

for the period ending:

3rd October, 2017

Applicant's
Signature

Director General
National Commission for Science,
Technology & Innovation

Permit No : NACSTIP/P/16/4508/13474
Date Of Issue : 4th October, 2016
Fee Received Is Sh 1000