THE ROLE OF THE KENYA LIBRARY AND INFORMATION SERVICES CONSORTIUM (KLISC) IN THE PROVISION OF ELECTRONIC INFORMATION RESOURCES IN LIBRARIES IN KENYA

BY

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MOI UNIVERSITY
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OCTOBER, 2014

DECLARATION

DECLARATION BY THE CANDIDATE

I certify that this thesis is my original work and no such material has been submitted for the award of a degree by this or any other university. No part of this work may be reproduced without the permission of the author and/or Moi University.

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DEDICATION

I dedicate this work to my late mother Phelomena, daughter Dawn and my sister Agnes

ABSTRACT

Due to the increasing prices of e-journals many libraries are turning to consortia building to provide e-resources for their members. In Kenya, libraries have formed Kenya Library and Information Services Consortium (KLISC) to provide e-resources for their members. KLISC like any other consortium provides access to knowledge and information resources electronically at low cost. It achieves this through partnership with international Networks for Availability of Scientific Publications (INASP). The partnership deals with issues such as negotiations for better prices and licensing process which are critical issues for consortia. Despite the important role KLISC plays, there are certain issues which may affect its effectiveness which may include ICT connectivity, skills for access, user satisfaction and the consortium management. The aim of the study was to explore the effectiveness of KLISC in the provision of electronic information resources in consortium libraries in Kenya with a view to proposing ways and means of enhancing its effectiveness. The objectives of the study were to: Investigate activities of KLISC in the provision of electronic information resources in Kenya; establish the need for e-resources in consortium libraries; ascertain the extent to which KLISC has assisted in the provision of e-information resources to consortium libraries in the country; establish the problems experienced by consortium libraries in accessing electronic information resources; and to propose solutions to improve provision of e-resources to consortium libraries. The study was informed by environmental Economic Networking Model (Kaul 2001). The study used qualitative inquiry. Data was collected from participants selected through stratified random sampling from KLISC's member libraries and KLISC officials. Method of data collection used was face-to-face interviews and the collected data was analysed thematically. The study established that KLISC provided the members access to forty two electronic databases from which members had access to various electronic information resources; provision of scientific information for researchers and scholars was the greatest need for e-resources among members; poor development of ICT infrastructure, poor connectivity and lack of ICT skills was a common challenge among members. The study recommends improvement of infrastructure among members, promotion of the consortium to all libraries in Kenya, introduction of other electronic services to enhance access to more information and resource sharing, and improvement of the training programme to make it more effective.

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Last but not least, I thank God for His Grace which was sufficient for me.

All glory and honor is yours Almighty Father.

AMEN

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBRIVIATIONS AND ACRONYMS

ALA	-	American Library Association
CALICO	-	**C**ape Library Cooperative
CARL	-	Colorado Alliance of Research Libraries
CHILL	-	Consortium of Independent Health Information Libraries in London
CONZULAC	-	Committee of New Zealand University Librarians Acquisitions Consortium
COTUL	-	Consortium for Tanzanian University and Research Libraries
CSIR	-	Council of Scientific and Industrial Research (India)
CURL	-	*Consortium* of University and Research Libraries
CUUL	-	*Consortium* of Ugandan University Libraries
EBSCO	-	Elton B. Stephens Company
EIFL	-	Electronic Information for Libraries
esAL	-	Eastern seaboard Association of libraries
FRELICO	-	Free State Libraries and information consortium
GAELIC	-	Gauteng and environs Library consortium
GALILEO	-	GeorgiA Library Learning Online
HEAL-LINK	-	Hellenic Academic Libraries LINK
HTML	-	Hypertext Markup Language
ICOLC	-	International Coalition of Library Consortium
ICSU	-	International Council of Scientific Unions
ICT	-	Information Communication Technology
IFLA	-	International Federation of Library Associations
CLM	-	Copyright and other Legal Matters
INASP	-	International Networks for the Availability of Scientific Publications
INDEST	-	Indian National Digital Library in Engineering Science And Technology
IP	-	Internet Protocol
KENET	-	Kenya Education Network

KLISC	-	Kenya Library and Information Services Consortium
LDAP	-	Lightweight Directory Access Protocol
LOCKSS	-	Lots of Copies Keep Stuff Safe
MARC	-	Machine Readable catalogue
NEICON	-	National electronic information consortium of Russia
PDF	-	Portable Document Format
PERI	-	Programme for the Enhancement of Research Information
SAILOR	-	Maryland's Public Information Network
SANLIC	-	South African National Library and Information consortium
SEALS	-	South Eastern Academic Library System
SGML	-	Standard Generalized Markup Language
SIP	-	Session Initiation Protocol

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

This chapter covers background to the study, statement of the problem, the aim and objectives, research questions, assumptions of the study, scope of the study, limitation, ethical issues, and significance of the study.

1.2 Background to the Study

The advent of Information Communication Technologies (ICTs) has enhanced library cooperation among libraries all over the world. This has led to a paradigm shift towards formation of consortia owing to the high prices of the emerging e-resources. Consortia are formed to enable members purchase these resources as a group by taking advantage of bulk buying and synergy. A consortium can be defined as a group of organizations who come together to fulfill a combined objective that usually requires cooperation and sharing of resources. Hirshon (1999) defines library consortia as any group of libraries working together towards a common goal, either to expand cooperation on traditional library services or electronic information services. Library consortium can also be defined as the organization of libraries formed to realize the benefit and opportunities of collaborative activity. The aim should be to deliver “more than the sum of the individual parts”. A library Consortium formation can be at local, regional, state, national or international level.

Although no particular date can be cited as the beginning point of library consortium, the concept of consortium as an association or partnership has long been a tenet of librarianship (Kopp, 1998). In America, cooperation for resource sharing started longer than any other part of the world and though the idea of cooperation has been in existence for many years, library consortium is still at its nascent stage in many countries. Being an emerging development where the number of participating libraries is increasing every day, much attention is placed on library consortia and consequently a lot has been written about it. An important aspect of resource sharing is library cooperation

1.2.1 Library Cooperation

There are many instances of such cooperation among libraries in the library literature (Kaul, 1999). Need of resource sharing was realized by libraries a long way back. Besides entering into inter-library loan practice, libraries also thought seriously of resource sharing in many other areas such as, co-operative acquisition, co-operative cataloguing, and co-operative classification, among others. Inter-library loan has been practiced as one of the most popular resource sharing activity amongst libraries. However, Inter-library loan in a traditional library is severely affected by barriers of information communication, such as apathy of the lending library, distance, language and time among others. The barriers to resource sharing in the print environment as it existed till recently include: open access to shared resource not feasible; service depends upon library performance; and access to shared resource at a cost.

A computerized inter-library loan system overcomes these limitations. For resource sharing, the participating libraries need to come together and cooperate in two broad

areas: developing the collection on shared basis; and developing services for exploiting such collection (Dhawan, 1999). Developing the shared resources is of great importance and central to the concept of resource sharing. The focus is first on eliminating duplication in the acquisition of various participating libraries to the extent possible. Thereafter, the focus is on the selection of publications which the participating libraries agree to share, and later on their acquisitions. The efforts of participating libraries in developing the shared resources are, therefore, directed in two distinct directions of rationalization and acquisition.

As the economy dwindles and many libraries having to contend with budget cuts, libraries are embracing consortia formation for acquisition of shared e-resources. Consortia are regarded as an effective strategy to increase the buying power of individual libraries over the short term and as an opportunity to maximize opportunities for cooperative collection building and for resource sharing over the long term (Landesman and Reenen, 2009). They offer libraries the ability to give users the access to a much broader range of materials than any one library could possibly offer. Consortia have become an important way of doing business and extending access to information for library patrons. By offering publishers the opportunity to sell to a very large number of users at once and to save on their marketing and administrative costs, consortia generally get products at a lower cost than individual libraries.

In other words this cooperation does not benefit the libraries only, vendors and publishers have come to realize how advantageous consortial purchasing can be. They get access to new market sectors, they are able to expand the reach of titles that otherwise would have a small audience by bundling them with titles in higher demand, thus making the more specialized (and sometimes weaker) titles attractive to consortia. The consortia approach is a win-win situation for all its stakeholders-users, publishers, and libraries. Most importantly, users are the ultimate end beneficiaries of such initiatives (Sreekumar, 2002).

1.2.2 Development of Consortia in the World

The development of consortia has been increasing since the 1990's in response to the increasing advancement in information technology. Since then, globally, there has been a steady increase of consortia. All over the world libraries are joining one form of consortia or another. Library consortia are of different levels and sizes. There are those which are of national level, for example, South African National Library and Information Consortium (SANLIC) of South Africa, KLISC of Kenya, Consortium of Ugandan University Libraries (CUUL) of Uganda and Consortium for Tanzanian University and Research Libraries (COTUL) of Tanzania. At the regional level are **C**ape Library Cooperative (CALICO) and Gauteng and Environs Library consortium (GAELIC) of South Africa among others. There are also those consortia of other consortia which can be termed as the meta-consortia. At this level there are only two major ones that is, International Coalition of Library Consortium (ICOLC0 and Electronic Information for Libraries (EIFL). Other consortia have developed at the state level. Good examples are

Colorado's Alliance of Research Libraries (CARL), GeorgiA Library Learning Online (GALILEO), Maryland's Public Information Network **(**SAILOR) and J-GATE of India among others. Evidence shows that the use of consortia is on the increase owing to benefits reaped by its members especially universities and research institutions where journals play a big role in provision of required information.

Consortia offer several benefits including: access to otherwise un-subscribed materials; scope for electronic archives; availability and monitoring of usage statistics; getting deep discounts through joint pricing negotiations – hence lower unit cost of information; reduced storage costs; developing common resources databases; effective document delivery systems; a single interface and access point; enhanced search facilities; and, but not limited to, better scope for developing a union catalogue among participating libraries The consortium is, therefore, needed by libraries because of Information explosion; diversity of user needs; financial crunch; and impossibility of self-sufficiency. Consortia and umbrella groups of consortia, such as International Coalition of Library consortium (ICOLC), have gained tremendous influence in the marketplace. They influence pricing, as evidenced by the 2009 *ICOLC Statement on the Global Economic Crisis and its impact on Consortial Licenses (IFLA 2009)*, and multiple iterations of the ICOLC *statement of current perspectives and preferred practices and for the selection and purchase of Electronic information.* The directors of consortia have taken the lead in moving publishers to a better understanding of the library market place. Interactions between consortia and publishers have highlighted some of the adversarial aspects of this relation, but it has also magnified the interdependence of these two parties as they relate

to the greater library environment (Burke, 2010). Likewise, publishers are offered through consortium, reduced attrition; improved income stability; incremental revenue; and greater visibility of their products. (Sreekumar, 2002).

Consortial benefits also extend to the traditional roles of consortia, namely the establishment of regional academic library consortia across the countries, using donor funding to promote best practices, improving inter-lending and document delivery services among members, implementing staff skills development programs, establishing committed leadership and staff in member libraries, enhancing electronic communication such as e-mail, e-mail discussion lists, and web sites, reducing the duplication of non-core materials through the joint purchasing of electronic resources, and enhancing the credibility and support provided by the consortium (Thomas, 2004). Likewise, consortia play a crucial role in assisting their members to access electronic journals as well as to negotiate for better prices for its members.

1.2.3 Need for E-Journal Consortia

The reason why libraries provide information is to satisfy the needs of their patrons. The need for provision of e-resources in libraries has been increasing due to various factors like technological development, for sharing of bibliographic information and provision of scientific information among others. Over the past ten years there has been substantial increase in the production of e-Journals the world over (Sreekumar and Sunitha, 2005). Out of over 150,000 serials published the world over, more than 70,000 cover scholarly communications, and among these more than 20,000 titles are electronic journals and are accessible on the Internet. More than 2500 of these scholarly journals are free for all,

which comprise a vast treasure of scholarly content from around the world. At the same time, the user community also has been influenced by these technologies to such an extent that there has been demand from users for providing such electronic information services in the libraries (Sreekumar & sunitha, 2005).

1.2.4 Role of Consortia in Resource Sharing

Participation in consortial activities places some responsibilities on libraries such as selection, price negotiation and licensing. These are quite involving and technical in nature and require expertise which is lacking among librarians in most cases. The consortia play an important role of running such affairs for its members. There are many issues relating to consortia like zeroing in and identifying the resources, uninterrupted online access, perpetual access to back issues, pricing, licensing, subscription payment, copyright archiving, planning and implementing the right kind of IT infrastructure among others. (Sreekumar & Sunitha, 2005). These issues are further discussed here below.

1.2.5 Major Issues Related to Consortium Building

Sreekumar and Sunitha (2005) put across the following as a list of major issues relating to consortium building:

1.2.5.1 Resources Identification

Identifying the most suitable product which is agreed upon by all the members of the consortium is more or less a difficult proposition. This is because each and every member will have his/her own wish list of information products and services, although

overlapping of products will be on the higher side in the case of an ideal homogeneous group.

1.2.5.2 Technology Infrastructure

Long range planning and sourcing of the appropriate IT and Communication infrastructure conducive for proper delivery of information resources is a pre-requisite for every participating library.

1.2.5.3 Pricing Issues

Concerning pricing, there are no standard practices or processes being followed by majority of the publishers of scholarly literature and hence this is a grey area all together. In most cases cost of the journals are out of reach of many libraries and only a consortia approach could provide some meaningful practical solution. Through consortia, publishers are invited for negotiations and asked to offer their best prices to the consortia. Several methods of pricing are followed, but what is important is that finally the price offered by the publisher should be economically viable for the participating libraries, which should also ensure uninterrupted and perpetual access to the resources.

1.2.5.4 Access Related Issues

There are various access methods offered by publishers towards accessing their resources which varies from case to case. Access authentication could be User ID / Password based or IP based which are popular among them. Uninterrupted and hassle free access to the scholarly content is the ultimate objective of the consortium.

1.2.5.5 Licensing and Copyright Issues

As opposed to the print paradigm, the E-Journal subscriptions and access models allow only licensing of the content or product for a stipulated period of time which has several restrictions and bindings on the licensee. The issue of licensing is however much more technical and requires intervention from experts in the area, so the consortia ensures they get knowledgeable representative in these matters. There are a number of issues under debate between librarians, users and publishers which need international attention and solution. Among these are, archiving and perpetual access to these journals.

1.2.5.6 Archival Issues

This is an area which needs utmost attention. However, this is yet to be attended to by most consortia. Long term preservation of the invaluable wealth of information being accumulated by the consortium is to be archived and preserved for posterity. As the technology is fast changing and also getting obsolete almost at the same pace, it is high time that these costly information resources are carefully archived and preserved on a long term basis. As mentioned earlier, consortia also help in the negotiation of prices whereby it enables the members to get better deals in terms of prices due to bulk buying. Through consortia, members can have access to many e-journals as all members, despite of size and needs, have access to the same resources. It is also the role of the consortia to ensure its growth by publicizing its services to non- members so that they can become members.

1.2.5.7 Perpetual Access

This refers to the right to ongoing access to electronic materials. Perpetual access is a term that is used within the library community to describe the ability to retain access to electronic journals after the contractual agreement for these materials has passed. In situations where digital materials are licensed, access to these materials is often lost after the licensing agreement has expired. In many cases the two parties involved in the license agree that it is necessary for the licensee to retain access to these materials after the license has lapsed.

Perpetual access is a term that is used within the library community to describe the ability to retain access to electronic journals after the contractual agreement for these materials has passed. Typically when a library licenses access to an electronic journal, the journal contents remains in the possession of the licensor. The library often purchases the rights to all back issues as well as new issues. When the license elapses, access to all the journal contents is lost. In a typical print model, the library purchases the journals and owns them. In order to retain access to journals that were released during the term of a license for digital electronic journals, the library must obtain perpetual access rights.

Perpetual access is closely related to digital archiving, which is the preservation of electronic documents. Often, if an institution is to retain perpetual access it must design a way in which to preserve the electronic documents that are granted by the license. Several initiatives have developed methods in which to retain electronic documents and

retain perpetual access. The most notable of these is the LOCKSS (Lots of Copies Keep Stuff Safe) program, the Dspace repository program, and the Ithaka Portico program.

1.2.5.7a LOCKSS (Lots of Copies Keep Stuff Safe), a project under the auspices of Stanford University develops and supports an open source system allowing libraries to collect, preserve and provide their readers with access to material published on the Web. The system attempts to replicate the way libraries do this for material published on paper. It was originally designed for scholarly journals, but is now also used for a range of other materials. Examples include the SOLINET project to preserve theses and dissertations at the member universities, and the MetaArchive project preserving at-risk digital content about the culture and history of the American South.

1.2.5.7b DSpace is an open source software package that provides the tools for management of digital assets, and is commonly used as the basis for an institutional repository. It supports a wide variety of data, including books, theses, 3D digital scans of objects, photographs, film, video, research data sets and other forms of content. The data is arranged as community collections of items, which bundle bit streams together.

1.2.5.7c Ithaka Portico Program began as the Electronic-Archiving Initiative launched by JSTOR in 2002. Portico provides libraries and publishers with a reliable, cost-effective solution to one of the most critical challenges facing the scholarly community today—ensuring that the electronic resources you rely on everyday will be accessible to future researchers, scholars, and students.

1.3 The Kenya Library and Information Services Consortium (KLISC)

The Kenya Library and information Services Consortium (KLISC) is an initiative of International Networks for the Availability of Scientific Publications (INASP). KLISC was established in 2003 with the main objective of collective subscription to electronic resources to cope with the increasing cost of information resources. Subsequently, it was agreed that the Consortium would draw its membership from university libraries, research institutions, and public/national libraries. Since its inception, the Secretariat of the Consortium has been based at the University of Nairobi library. The vision of KLISC is to realize unlimited access to knowledge and information resources while the mission is to provide leadership and building of synergy in knowledge and information sharing through capacity building, advocacy, networking and collaborations.

1.3.1 KLISC Membership

The membership of KLISC has been steadily growing since its inception. Currently its membership has risen to sixty two. It draws its members from local universities both public and private, research institutions, and other institutional libraries. The following are the members of KLISC:

Table 1.1: KLISC'S Membership

PUBLIC UNIVERSITIES	**UNIVERSITY COLLEGES**
Egerton University	KCA University
Jomo Kenyata University of Agriculture & Technology	Marist International College
Kenyatta University	Mombasa Polytechnic University college
Moi University	Kenya Polytechnic University College
Maseno University	Nairobi Evangelical Graduate School of Theology
Masinde Muliro University of Science & Technology	Inoorero University college
University of Nairobi	Pan Africa Christian University
Multi-Media university	Narok University College
	Presbyterian University
	Tangaza College- The Catholic University of East Africa
PRIVATE UNIVERSITIES	
African Nazarene University	
Daystar University	**b) Middle colleges**
Kenya Methodist University	Kenya Institute of Management
Kabaraka university	Kenya Medical Training College
Aga Khan University	Kenya School of Monetary Studies
Great Lakes University of Kisumu	Kenya College of Insurance
Catholic University of Eastern Africa	Discipleship College
St. Paul's University	Kenya Armed Forces Training College
Mt. Kenya University	Presbyterian Church of East Africa Pastoral Institute
United States International University	Bandari college
Catholic University of East Africa	National Defence college
Baraton University	
	c) National Government/public/institution
	Kenya Institute of Education (KIE)
	Kenya National Library Services

PIONEER INTERNATIONAL UNIVERSITIES Strathmore University Australian Studies Institute (AUSI) **NON-UNIVERSITY INSTITUTIONS** **a) Research institutions** African Population and Health Research Centre International Centre of Insect Physiology and Ecology (ICIPE) International Livestock Research Institute (ILRI) Kenya Agricultural Research Institute (KARI) Kenya Forestry Research Institution Kenya Marine and Fisheries Research Institute Kenya Medical Research Institute World Agro-forestry centre African Research and Resource Forum African Medical Research Foundation L 'institute Francois de Recherche Afrique (IFRA) IUCN/SSC African Elephant specialist Group	Kenya Revenue Authority Communications Commission of Kenya Commission for Higher Education (CHE) Kenya Wildlife Service Ministry of Information & Communications Ministry of Foreign Affairs National Economy and Social Council Kenya National Human Rights Commission

1.3.2 KLISC's Objectives are as follows:

- To develop and improve cooperation and understanding among member libraries
- To work towards the creation and promotion of virtual libraries
- To enhance the provision of learning resources and access to information
- To subscribe to electronic resources for consortium members
- To encourage and support the professional development of libraries
- To forge cooperation with foreign and international library consortia and other relevant organizations and institutions
- To encourage adoption of ICT services among member institutions
- To market KLISC among upcoming research and academic institutions
- To provide a forum for sharing information and experiences
- To develop cooperative acquisition schemes among members
- To promote intellectual freedom

1.3.3 KLISC Management

KLISC is run by an executive steering committee comprising of the following:

- Chairperson
- Vice Chairperson
- Secretary
- Vice Secretary
- Treasurer
- Programme Coordinator

KLISC's management structure comprises of:

- Advisory Board
- Executive Committee
- Programme Committees

1.3.4 Partnership

KLISC partners with INASP and also benefits from eIFL

1.3.4.1 INASP

INASP stands for International Networks for the Availability of Scientific Publications. Its work focuses on communication, knowledge and networks, with particular emphasis on the needs of developing and emerging countries. INASP was established by the International Council of Scientific Unions (ICSU) in 1992, and was registered as a UK charity in 2004. Based in Oxford and governed by an international Board of Trustees, INASP is run by a small number of full-time staff working with, and through, partners and networks in over one hundred countries. They work with 23 partner countries and over 80 network of countries around the world. INASP's work is funded by its partner countries, governmental and non-governmental development agencies, and philanthropic foundations. One of INASP's programmes is the Programme for the Enhancement of Research Information (PERI). PERI was the second five-year phase of INASP's Programme for the Enhancement of Research Information. PERI facilitated access to e-journals through subsidized procurement to Kenyan universities and research institutions. Focusing on the needs of developing and emerging countries, PERI works with partners

to support global research communication through knowledge exchange, network building and capacity strengthening. This programme encourages consortium building and helps the consortium through negotiating on its behalf. In Kenya, KLISC is a beneficiary of the PERI programme. INASP's work focuses on communication, knowledge and networks, with particular emphasis on the needs of developing and emerging countries. They respond to their national priorities for: access to national and international scholarly information and knowledge; capacities to use, create, manage and communicate scholarly information and knowledge via appropriate ICTs; and national, regional and international co-operation, networking and knowledge exchange. They also advise and advocate for improved policy and practice in achieving sustainable and equitable development through effective communication, knowledge and networks.

PERI as a programme of INASP, focuses on the needs of people in developing and emerging countries. PERI works with partners to support global research communication by further strengthening: the knowledge and skills of people working in research communication; participation in international knowledge networks; and research communication policy and practice. Taking advantage of the possibilities offered by ICTs, the core programme areas focus on: access to international scholarly literature; successful writing, publishing and communication of research from developing and emerging countries; effective use, evaluation and management of ICTs to support research; development of modern, digital research libraries; and advice and advocacy around the role of research communication and the people engaged in it for sustainable and equitable development.

In Kenya, PERI facilitated access to e-journals through subsidized procurement for Kenyan universities and research institutions. Since most of the institutions had been connected to the Internet through Kenya Education Network (KENET) project, KLISC was formed comprising of universities and research institutions to maximize on the utilization of the e-journals. The consortium subscribes to over 42 online resources and databases globally. In Kenya, there are big users, small users and non users but all with expressed need for the e-resource within their education and research institutions (Shibada, 2006).

The high cost of printed journals has generated low output of research in Africa. Research is one of the main activities of African universities besides teaching, learning and extension service processes. PERI has helped to overcome the challenges of accessing research literature for scholars in Africa. Through PERI, all public and private Universities including research institutions can access e-journals. Gearing to support research in Africa, PERI has four in-built programme component of e-journal capacity building involving e-journal procurement, Internet training, journal online programme and journal management workshops (Shibanda, 2006).

1.3.4.2 eIFL

eIFL stands for Electronic Information for Libraries. eLFL.net is a not for profit organisation that supports and advocates for the wide access of electronic resources by library users in transitional and developing countries. Its core activities are negotiating affordable subscriptions on a multi-country consortial basis, supporting national library consortia and maintaining a global knowledge sharing and capacity building network in

related areas, such as open access publishing, intellectual property rights, and open source. KLISC is a beneficiary of eIFL services.

1.4 Statement of the Problem

Information revolution has posed several problems which have far reaching implications in the society. This is partly due to the massive proliferation of information, leading to information management problems, as well as the realization that information is power and only those who harness it can make progress. This is demonstrated by the fact that the most developed countries have also invested heavily in information. Among these are USA, Britain and Japan. This investment however, has to be in the way which will ensure generation of information and placing it in the public domain for all to utilize. Research is the only sure way of ensuring this and thus the need to empower the research institutions and universities in a country through constant supply of journals. Journals constitute the best source of information for researchers. However, they are also very expensive to acquire and many institutions struggle to avail a reasonable number of these to their users. One of the reasons is the high cost of printed journals which has generated low output of research in Africa. Another reason is that libraries and other information services in general have a low priority, that is, when money is scarce and priorities are realigned, the library and information systems always find their schemes left out, or at best delayed. It is because of this phenomenon that the concept of library consortium has developed.

Through consortia libraries are able to access electronic information resources at low costs through bulk buying and negotiated prices. However, to provide these resources there are requirements and conditions which libraries have to meet. These requirements pose great challenges to libraries. The challenges can be explained within the poor quality services and the low levels of e-journal exploitation among the members of consortia. Moreover many libraries are still unable to join the consortia even when they know their advantages. This situation is exemplified by poor output in research publications and ineffective dissemination of information in libraries.

1.5 Aim of the Study

The aim of the study was to determine the effectiveness of KLISC in the provision of information resources in consortium libraries in Kenya with a view to proposing ways and means of enhancing its performance.

1.6 Objectives of the Study

The study sought to fulfill the following objectives:

1. To investigate activities of KLISC in the provision of electronic information resources in Kenya.
2. To establish the need for e-resources in consortium libraries.
3. To ascertain the extent to which KLISC has assisted in the provision of e-information resources to consortium libraries in the country.
4. To establish the problems experienced by consortium libraries in accessing electronic information resources.

5. To propose solutions to improve provision of e-resources to consortium libraries.

1.7 Research Questions

The study endeavoured to address the following questions:

1. How does KLISC carry out its activities in the provision of electronic information resources to libraries in Kenya?
2. Why are electronic resources important to member libraries?
3. What kind of support do consortium libraries expect from KLISC?
4. What are the challenges experienced by consortium libraries in accessing electronic information resources?
5. What should be done to improve access of electronic information resources in libraries in Kenya?

1.8 Assumptions of the Study

The study was guided by the following assumptions:

1. KLISC members lack the necessary ICT infrastructure required for the provision of electronic information resources.
2. The consortium members have not benefited much from KLISC.
3. The librarians in member libraries of the consortium do not have the necessary skills to effectively provide electronic information resources and services.

1.9 Significance of the Study

The study was conducted to investigate the provision of electronic resources in libraries in Kenya through KLISC. Availability of Electronic resources has benefited most academic, research and other libraries in Kenya in providing access to scientific information to their patrons.

The findings of this study are significant in the following ways:

1.9.1 Theoretical Significance

The study has provided a knowledge base on the activities of KLISC and how it conducts its affairs, the kind of members served and the kind of information services offered. These findings can be used by libraries that are not members but in need of this kind of services to make informed decisions on whether or not to join KLISC.

The study has showed how KLISC has benefited its members through provision of electronic resources and also has documented information on challenges encountered in providing electronic information services. This knowledge can be used to come up with counteractive measures to overcome the challenges and improve the effectiveness of provision of e-information to libraries in Kenya.

It is hoped that the study will encourage libraries in Kenya to embrace use of consortia by becoming members of the existing consortium or forming new ones in order to reap its benefits.

The study has also identified gaps for further research.

1.9.2 Practical Significance

The study has provided recommendations on how to deal with the challenges. This, if implemented, can improve the services to the end users of the member libraries.

1.9.3 Policy Related Significance

The study has provided information which can assist in formulation of guidelines for resource sharing among all libraries in Kenya.

1.10 Scope of the Study

The study involved all the member libraries of KLISC in Kenya at the time of proposal writing. The members included public university libraries, private university/international libraries, university colleges, research libraries, middle college libraries, and institution/government/national libraries, hereafter referred to as others. This gives a total of 63 libraries from which a sample of 50 was drawn. (See section 3.5)

1.11 Limitations of the Study

1.11.1 Study Coverage

Diverse geographical coverage of the study due to the scattering of KLISC members in Kenya was a major challenge. To overcome this challenge the data collection period was extended by one month.

1.11.2 Lack of Cooperation

The researcher also experienced problems from a few respondents who were not willing to provide information. In one case information was sought from another colleague who was willing. For others it took a bit of persuasion.

1.11.3 Use of a Recording Machine

Another hitch was on the use of a recording machine as a form of recording data. The researcher found that some of the respondents were not comfortable with it. This was overcome through assuring respondents of the confidentiality of the information collected which made them accept it.

1.12 Definition of Terms and Concepts

Aggregation: Bundling up of journal articles so that buyers get more cheaply than they would if they were to subscribe to individual titles.

Bibliographical Database: A bibliographic database is a database of bibliographic records. It "contains references to published literature, including journal and newspaper articles, conference proceedings and papers, reports, government and legal publications, patents, books, etc (wiki)

Click-through: In relation to licensing, this refers to non-negotiated licensing.

Consortial licensing: This is licensing through the consortium as opposed to licensing by individual members**.**

Diversity of user needs: Varied or different user needs.

Document delivery: The physical transfer of the loaned materials to those who have borrowed them.

Electronic archives: provision of permanent access to information especially if that information exists only in electronic form.

Financial crunch: This means an economic crisis.

Information explosion: A term used to describe the rapidly increasing amount of published information and the effects of this abundance of data. As the amount of available data grows, managing the information becomes more difficult, which can lead to information overload.

Information overload: Refers to the state of having too much information to make a decision or remain informed about a topic. (New world encyclopedia).

Library cooperation: Cooperation is defined in the Oxford English Dictionary as "…working together to the same end, purpose or effect.

Litigation: Business dictionary (online), defines litigation as the Ultimate legal method for settling controversies or disputes between and among persons, organizations, and the State.

Meta consortium: Refers to a consortium of consortia or a cooperation of consortia.

Monograph: A scholarly piece of writing of essay of book length on a specific, often limited subject. (answers.com)

Networking: The establishment of relationships at either the level of the individual or the institution, for the achievement of common goals. In librarianship it covers cataloging, acquisition, bibliographic control, data exchange, interlibrary lending and staff training.

Nordic countries: Nordic countries make up a region in Northern Europe and the North Atlantic which consists of Denmark, Finland, Iceland, Norway and Sweden (all of which use a Nordic Cross flag) and their associated territories which include the Faroe Islands, Greenland, Svalbard and Åland.

Online resources: These are information resources which can be accessed through a web or internet. They include bibliographic databases, electronic reference books, search engines for full text collections, digital collections of data and data sets.

Perpetual access: Refers to the right to ongoing access to electronic materials. In situations where digital materials are licensed, access to these materials is often lost after the licensing agreement has expired. In many cases the two parties involved in the license agree that it is necessary for the licensee to retain access to these materials after the license has lapsed.

User Interface: The user interface allows the user to communicate with the operating system through the keyboard, mouse, and menus of a computer system.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to the research topic. The chapter entails extensive and thorough location, reading and evaluation of information materials to collect pertinent information to answer the research question. Information was gathered from various information sources including journal articles, books, and conference proceedings among others in both print and electronic format. The usefulness of literature review is to gain knowledge and understanding of the research area. The chapter is divided into two sections. Section one covers the theoretical framework upon which this study is based, while section two reviews the literature covering the broader areas of the research.

2.2 Theoretical Framework

A framework is simply a structure of ideas or concepts and how it is put together. A theory is a reasoned statement or groups of statements, which are supported by evidence, meant to explain phenomena. A theoretical framework, therefore, is an attempt to show the existence of self-formulated theories in so far as they relate to the research objectives and questions in connection with variables and propositions. According to Kombo and Tromp (2006), a theoretical framework is a collection of interrelated ideas based on theories which accounts for or explains phenomena.

This study was informed by the Environmental Economic Networking Model (Kaul 2001) which was developed by the Environmental Economic Unit of the Institute of Economic Growth in India to share and disseminate knowledge among interested individuals and organisations.

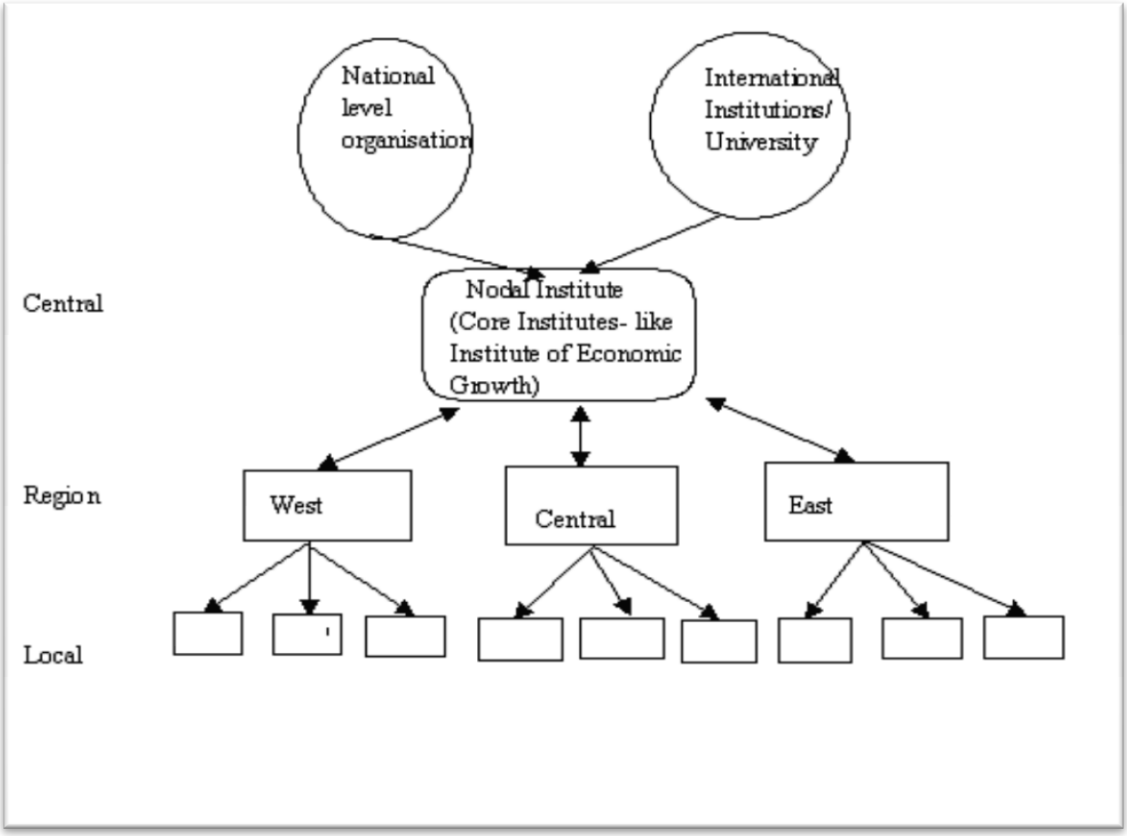


Figure 2.1: Environmental Economic Networking Model (Kaul 2001)

Source: adapted from Kaul 2001 pp 21

A network can be local, regional, national or international. It serves as an electronic transfer of information between two or more points irrespective of distance. The model that was used for networking as well as resource sharing in Environmental Economics is given in Figure1. The Network exists in three stages.

In first stage, the model of resource sharing includes the following:

- Interlinking between National & International Institute/University/Organisation in the field of Environmental studies.
- One of the national level institutes takes initiative, for example, Institute of Economic Growth (IEG) to act as a hub or central node for coordinating all networking activities.
- The central node gets information from the national level institutions as well as international institutes in the field of environmental studies.

At the second stage, the central node accumulates information from all participating institutions of national and international level to be disseminated to regional level institutions/universities and others. To make this process of information dissemination more effective and useful, a two-way communication is encouraged.

At the third stage, after the networking among international, national and regional, institutions/ university situated at regional level will disseminate information to the local level Institutions/ University, which also includes Non Governmental Organisations.

It's Relevance to the Study

For networking and resource sharing in a consortium, the model would develop in three stages.

At the first stage, it involve the following:

Interlinking between the electronic information resources publishers/ aggregators/vendors and sponsors/international organizations as well as the consortium which acts as the hub or the central node for coordinating all the network activities.

At the second stage, the consortium and the sponsors negotiate the prices and oversees the licensing process between the consortium and the publishers/aggregators/vendors. The member libraries are connected to the databases from all the participating publishers/aggregator/vendors.

At the third stage, the libraries provide access to the electronic information resources to the end users

2.3 Conceptual Framework

A concept is an abstract or general idea inferred or derived from specific instances. A concept can also be a word or phrase that symbolizes several interrelated ideas. Conceptualization is inventing an idea or explanation and formulating it mentally. A conceptual framework, therefore, can be said to be a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. In this relation, there are independent variables and dependent variables. The independent variables in connection to this study are consortium building, ICT infrastructure building, consortial price negotiations and licensing. The dependent variables are increased access, cost saving, and reduced storage cost. The following is a conceptual frame work for this study:

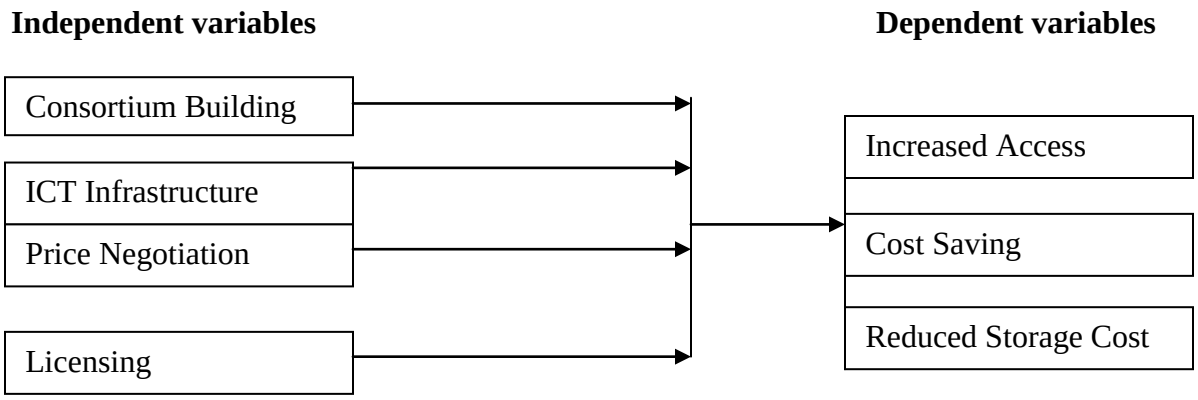


Figure 2.2: Conceptual Framework

The Difference between Theoretical and Conceptual Frameworks

A conceptual framework occurs when a researcher links concepts from literature to establish evidence to support the need for the research question. If somebody else has already linked these concepts with valid research, they made a theoretical framework which can be used as a "ready- made map" for other scientists to guide their own research question. In other words, conceptual framework relates to the type of ideas a researcher will be discussing while theoretical framework relates to how the researcher will be discussing those ideas. (answers.com)

2.4 Related Studies

2.4.1 Historical Development of Consortia

Although the idea of cooperation has been in existence for many years now, library consortium is still at its nascent stage in many countries. Being an emerging development where the number of participating libraries is increasing everyday, much attention is placed on library consortia and consequently a good amount of literature has been written about it. USA is often seen as the home of consortia or 'networks" as they were formally known. Regional networks developed as early as the 1930s as a means for distributing state funds for libraries (Wade, 1999). In 1970S OCLC (then, Ohio College Library Centre) was established and at the same time other networks developed in Canada, UK, and Australia for the purpose of sharing MARC cataloguing data (Wade, 1999). Other reasons for development of these networks were to facilitate borrowing or collection sharing, sharing of library systems and facilitation of state funding which favoured regional networks as opposed to individual libraries.

In connection to modern consortia, most of the literature is on case studies determining the feasibility aspects of consortia. Nfila & Darko-Ampen (2002) traces the history of library consortium from 1960's through 2000 and reports that in 1997, the International Coalition of Library Consortium (ICOLC) was formed. Rao (2001) reports about the status of the existing library and information networks in India. Mclean (1999) examined the characteristics underpinning resource sharing among university libraries in Australia and on how the information revolution posses global challenges in terms of infrastructure and use of internet. He argues that Australia lack resource coordination at the national level, but several important initiatives were underway.

Ashoor (2000) suggests a few guidelines for the Arabian Gulf regions and concludes that libraries in the region should enter into partnership to establish consortium. Giordano (2002) traces the history of information communication technologies in Italian libraries with reference to library networks and digital cooperation initiatives. Fordyce (2004) wrote an article on 'New Zealand University Library Acquisitions Consortium for the supply of print monograph resources' where the author discusses different consortium related issues. The Committee of New Zealand University Librarians Acquisitions Consortium (CONZULAC) was developed to gain maximum value from expenditure on print monograph resources, to achieve operating efficiencies and to improve levels of service.

There are other instances of several libraries coming together voluntarily for mutual benefit of respective users, just like cooperatives, which was the earliest stage of library cooperation. In the second stage, computerized networks came into vogue for sharing of resources which were at the time, mainly in traditional printed format. The networks created and shared their bibliographical databases. The users of the participating libraries could get the required documents from other libraries through delivery services. With the advent of e-resources, the concept of the consortia has been mooted mainly for acquisition of e-journals. Through consortium, it has become possible for users to access and download the required materials without even going through the elaborate process of inter-library lending.

The cooperation has gone further to include provision of database services from servers owned by the consortium. More recent incentive for collaboration has been facilitated by new and long awaited developments in technology, most notably virtual union catalogues using the Z39.50 protocol and web based client initiated interlibrary loan requesting (Wade, 1999). This is facilitated by international standards for interlibrary loan requesting. This requires implementation of interlibrary loan software in which each library in a group purchases the same software and operating it on a local system or a group of libraries shares the same software on a shared system. The main motivation behind all this is the sharing of increasingly expensive library collections in the most cost-effective manner for mutual benefit and general cost saving (Hirshon, 1998).

Due to quick advancement in technology in the 1990s, there emerged a new and powerful major motivation to form smaller groups for the purpose of pooling of purchasing and negotiations power for electronic database licenses and services (wade, 1999). This motivation was in form of consortium building and a lot has been written in this regard. Most of the literature is on case studies determining the feasibility aspects of consortia. (Nfila & Darko-Ampen, (2002) traces the history of library consortium from 1960's through 2000 and reports that in 1997, an international association of library consortium was formed. (Rao, 2001) reports about the status of the existing library and information networks in India. (Mclean, 1999) examined the characteristics underpinning resource sharing among university libraries in Australia and how the information revolution posses global challenges in terms of infrastructure and use of internet. It is argued that Australia

lack resource coordination at the national level, but several important initiatives are underway.

Hormia-Poutanen et al. (2006), discusses the consortia models in Europe and the following are consortia among those discussed. FinElib of Finland which was established in 1997; HEAL-LINK of Greece established in 1998; NEICON in Russia established in 2002; and NOWAL, CHILL and CURL of UK.

In Africa, South Africa takes the lead in consortia development. According to Thomas and Flourie (2006), in his paper about academic Library consortia in South Africa, the initial development period of establishment of consortia in South Africa was between 1992-1998, a period within which, five regional academic consortia were established. These are CALICO, SEALS, ESAL, GAELIC AND FRELICO. In East Africa, there is probably the least record of development of consortia. To date, only three library consortia exist, one in each country. According to Were (2010), these are CUUL OF Uganda, COTUL of Tanzania, and KLISC of Kenya

.

There are different types of consortia, small and large, formal and informal. These together with the regional networks have joined to form consortia of consortia such as the International coalition of Library consortia (ICOLC) which is an informal consortium with over 200 members from all over the world

2.4.2 Role of a Library Consortium in The Provision of Electronic Information Resources

"A library consortium is a formal association of libraries, not under the same institutional control, but usually restricted to a geographical area, number of libraries, types of materials, or subject interest, which is established to develop and implement resource sharing among members" (Marty, 2002). The objective of library consortia is to control and reduce information costs, to improve resource sharing, to develop cooperation and a networked information environment (e.g. via campus systems, campus networks, and the Internet), and to share licensing issues with each other (Hirshon, 1998).

2.4.3 Library Co-Operation and Networking

Due to economical factors all over the world, libraries cannot be comprehensive in their collections. They cannot also pretend to be islands unto themselves. Moreover, cooperation is not a feature of the weak and poor economically but a necessity to every library big or small, rich or poor. Even in countries where funding is not problematic, co-operative ventures which promote resource sharing operate. A good example is the Library of Congress (LC), the USA's National library and the largest in terms of collection which borrows from other libraries. This is a living proof that co-operation is an essential facet of modern library management. It is a common feature in most western countries which are also known to be the most developed and rich countries in the world (Gorman and Cullen, 2000).

Libraries have long recognized the need for co-operation. This is mainly due to the realization that no library is self sufficient to stand alone and be able to meet the

information needs of its users. That is why there is now a growing awareness that organizations must work together to optimize the use of resources. With the continuing increase in the number of items being published, both in traditional hard copy and electronically, and the need for users to get the most up-to-date information, no library is now able to meet the existing and potential information needs of all its users (Pilling, 2000). Libraries are now being compelled by the prevailing circumstances such as; budget cuts, response time for services, obsolete equipment, untrained personnel, out-of-date collections, and generally, weakened services to form a united front that would make it possible to provide adequate solutions to common problems (Marty, 2002).

Cooperation is defined in the Oxford English Dictionary as "…working together to the same end, purpose or effect". This implies a need to establish full agreement among all participants on the exact aims and objectives of the proposed cooperation (Parke, 1976). In an attempt to understand the phenomena, Reynolds (1974) and Kaplan (1973) attempted to distinguish between cooperative activities from everyday activities of librarians, whilst Batubo (1988) defined cooperation as the pooling together of resources of two or more libraries to satisfy user needs. On top of this, Markuson (1979) adds that cooperation also is an activity to promote and enhance library operations. In addition, Lindenfield (1984) identified four factors that facilitate cooperation as: common needs; resources to be shared; understanding the role of each participant; and willingness of cooperating members to adopt new policies and procedures.

2.4.3.1 Purpose of Library Cooperation

Simpson (1990) identifies three reasons for library cooperation as: it enhances the quality of services that a library provides; it produces a sense of accomplishment and involvement; and reduces the expenditure of individual libraries. On the other hand, Lowrey (1990) identifies the reason why libraries should cooperate as: no library has the resources to satisfy all the needs of its users; cooperation will help provide the resources to meet those needs (Pinkerton, 1984); libraries have democratic responsibility to minimize the gap between the information rich and the information poor (Heath, 1989)

.

2.4.3.2 Barriers to Cooperation

Woodsworth (1991) pointed out that the attitudes of people could make or break cooperation. Negative attitudes could arise from: the custodial mentality of libraries; fear of loss of autonomy; clash of personalities; jealousy and stubbornness; inertia and indifferences; complacency and self-satisfaction; mistrust between libraries and librarians; and the assumption that each library has unique, rather than common needs and goals.

2.4.4 Networking

Generally speaking, networking may refer to the establishment of relationships at either the level of the individual or the institution, for the achievement of common goals. In librarianship it covers cataloging, acquisition, bibliographic control, data exchange, interlibrary lending and staff training. In a nut shell, the main objective of resource

sharing is to maximize the availability of materials and services and to minimize expenses. Networking can be formal or informal. It can also be at the level of the individual where, for instance, researchers with similar research interest, but living in different countries or even in the same organization may decide to work together by making information available for each other.

Networking is not an entirely new concept in librarianship. Libraries have from time immemorial shared information and have undertaken co-operative ventures for the benefit of the group. This is a fact that needs to be stressed. Formal and informal co-operation have existed in the information field for many decades. Libraries have created associations to carry out joint projects, or to share resources and services. But these associations have tended to focus on a single, specific goal, for example: collective catalogues; photocopying services; interlibrary loans; training; and professional updating, etc. (Coto and Gil, 2000). In the UK, for example, the National Central Library was operating in 1916 and in the USA libraries have participated in formal and informal lending programmes for even longer (Elkington and Massie, 2000).

2.4.4.1 Benefits of Networking

Networking in library and information systems provides a wider access to collections, improves public and technical services and enhances operations by sharing resources, reducing duplication and offering more cost-effective services (Khalid, 1997). These are but some of the benefits that participating institutions may derive from networking. Other benefits are:

- sharing experiences;

- creating sources for resources:
- developing strategic alliances;
- facilitating and promoting collaboration and co-operation so that libraries can improve and expand access and distribution to information resources; and
- training and development of professional librarians.

Networking has been facilitated by the application of ICTs in the information provision environment. Use of ICTs has revolutionized the way information is created, organized, stored, disseminated and used. The technology has impacted on provision of information by making it easy for libraries to cooperate through networking. Networking between cooperating libraries allows use of common library information systems which in turn allow networked libraries to share resources especially electronic resources. This is very important because information resources are very expensive to acquire especially the journals. It is in this light that library consortia are being regarded as the best way forward for libraries to continue providing information to meet the needs of the patrons.

2.4.5 Resource Sharing

Basically consortia are being formed for resource sharing. Resource sharing is not a new concept among libraries. Most libraries, in one way or another, share their resources with other libraries. Resource sharing requires libraries to work together in order to satisfy the needs of their users. Odini (1993) sees resource sharing as a term used by institutions working together for the benefit of users. This sharing also enables users to maximally use available resources not just within their libraries but also from other cooperating

libraries. This also helps the participating members to achieve their objectives at the same time cutting cost through the cooperation or the partnership mechanism.

The essence of this is that no library however rich in financial or bibliographic resources can ever expect to purchase or meet all the demands of its clients. In other words, no library is totally self-sufficient or an island by itself, even if it has countless millions of volumes or thousands of journals. The reason for this disparity between demand and supply of information materials can be attributed to the diversity of user needs and the dynamic nature of these needs. As the world evolves, and new discoveries are made, so do the needs for information. Information is now being seen as the driving force for development and only those with the most adequate, up-to-date and timely information will make it. The best way forward, therefore, is for libraries to abandon the "Empire Building" approach in libraries and utilize the synergy of cooperation. In the view of dwindling resources and increasing donor fatigue, information centers should establish proper working relations.

Resource sharing also involves sharing of staff and cooperating libraries can assist those who lack technically skilled personnel through exchange of staff. This is of great importance because like any other resource, staffing is expensive and many libraries cannot afford. Staffing is like any other resource, like books, and therefore should not be ignored when discussing resource sharing (William, 1978).

2.4.5.1Types of Resource Sharing

2.2.5.1a Interlibrary Lending and Document Delivery

Interlibrary lending is the oldest form of resource sharing. Information workers have been known to practice interlibrary lending as far back as the year 200 BC when the library at Alexandria loaned books to the library at Pergamum. It is therefore the most common activity amongst cooperating libraries. Through interlibrary lending, libraries exchange information materials through mutual understanding and in actual fact interlibrary loaning is the core of library cooperation. Document delivery on the other hand is the physical transfer of the loaned materials to those who have borrowed them. It is part and parcel of resource sharing and ensures that documents not available to users at one point are sent to them from wherever they are available. Interlibrary lending and document delivery can only be achieved if there exists a form of cooperation between libraries with unmet needs or services. (Marty, 2002).

However, according to Ayre (2006), there are six trends that could affect library delivery services. These are: increasing availability of library holding in shared catalogues, growth of patron-initiated borrowing, development of tools to display library holdings in non-library applications, increased availability of electronic material, increased service level demands caused by competing information providers and aggregation of supply and demand. He continues to contend that the current problem with delivery programmes is lack of integration with the circulation function which would ensure inclusion of delivery into the hands of users. In other words, delivery would become patron-initiated as opposed to library mediated. A group convened by ALA in 2005 to discuss resource

sharing, agree with Ayre by observing that "the library world is nearing the end of an era of mediated resource sharing". This means material delivery will change from moving materials from library to library and deliver materials direct to the users.

2.4.5.1b Shared Acquisition

Acquisition is a library function aimed at developing the collection of a library. Libraries experience a lot of problems when trying to develop the collection. One of the major problems is inadequate funds. Libraries all over the world experience diminishing budgets. This function also involves other activities like cataloging, classification, lending and staffing. Shared acquisition helps in cutting cost for individual members and reduces unnecessary duplication. Joined purchase allows sharing of cost of expensive materials (Odini, 1993).

2.4.5.1c Exchange of Personnel

Due to lack of funds, majority of libraries in developing countries experience shortage of adequate and qualified personnel. This reduces effectiveness and efficiency of service delivery to the clientele. Through resource sharing libraries can exchange personnel and assist those libraries with less qualified personnel to benefit from the expertise of their qualified counterparts. These will provide their technical skills to the disadvantaged libraries. The personnel can also participate in sharing of ideas through seminars, workshops, and conference, both external and internal.

2.4.6 Licensing

The issues of licensing are very important when it comes to accessing electronic information resources. A license is an agreement between the publishers or aggregators and the consortium or a library. Licensing is to electronic documents as ordering and paying is to print materials. It is only through licensing agreements that provision of electronic documents is possible. Licensing requires the ability to read contracts and contract law (IFLA, 2009). Licensing basically involves two key players, the licensor (publisher or aggregator) and licensee (the library or a consortium), but also requires a mediator in form of a lawyer to help interpret the law as well as the jargon used in the license agreement.

The imbalance in the relationship between a publisher and the library has necessitated the need to protect the weaker party in the negotiations. It is for this reason that the European association of library associations has demanded that a clause must be added into the copyright directive under work in the European Union to deny contracts in which any partner would be put in a weaker position than what is granted in the copyright law (IFLA, 2009). There are also suggestions from IFLA CLM group to demand the contracts to be in the language of the concerned country as opposed to the current situation where English is mostly used.

The copyright legislation has a relation to licensing in that the copyright law gives the limits in which there is no need for permitted use, licensing agreements and/or fees (IFLA, 2009). However, copyright application varies from country to country and

concerns usually copying for private purposes, safety copying in libraries and archives, copying for visually impaired or other handicapped among others.

2.4.6.1 License Agreement

Things to be agreed in a license agreement are e.g.:

- Definitions
- Choice of law v the Rights granted under the License
- Usage Restrictions
- Term and Termination
- Delivery and Access to the Licensed Materials
- License Fee
- Licensee's (Library) Undertakings
- Implementation and Evaluation
- Warranties, Undertakings, Indemnities (IFLA, 2000).

Since licensing agreements are done under the contract law, librarians must get acquainted with their national contract law. To be able to tell the provisions of use to users, every librarian must know at least the basic things of licensing. License agreements are very expensive, a feature which makes e-resources to be very expensive. Considering the financial constraints faced by libraries, the question is who is to pay for the license agreement. At the current situation, this could be by the libraries themselves, like in German, Netherlands, and UK. In other places like the Nordic countries, this is being catered for by government grants. The main strategy, however, is for libraries to join

forces to create licensing consortia which could be country-wide, state-wide, region-wide or local, among a certain type of libraries (e.g. research or academic libraries).

2.4.6.2 Licensing Principles

According to IFLA 2001, the use of electronic information is defined and described by contractual agreements, otherwise known as licenses. IFLA therefore presents the set of thirty two principles that should prevail in the contractual relationship and written contracts between libraries and information providers. The principles are as follows:

2.4.6.3 Licenses and the Law

This covers five principles as follows: Licenses represent an agreement between the library that seeks to make an electronic resource available for its readers or constituents, and a publisher or vendor who has the rights to such resources and seeks to make them available in the library marketplace. License terms and conditions must be fully available to customers in advance of their contracting for said resources. Every license is subject to discussion of terms and to negotiation between the parties; in the case of "shrink-wrapped" and "click-through" non-negotiated licenses, the terms should support public policies in such areas as copyright, privacy, intellectual freedom, and consumer rights; licenses (contracts) for information should not exclude or negatively impact on users of the information or any statutory rights that may be granted by applicable copyright law; the choice of applicable law should be acceptable for both parties. Preferably it should be the national or state law of the licensee; and licenses should be negotiated and written in the primary language of the library customer.

2.4.6.4 Licenses and Values

This covers principles six to nine as follows: the license agreement should be clear and comprehensive, recognizing the needs of the concerned parties. In particular, important terms should be defined so as to be clearly understood; the license should balance the rights and responsibilities of both parties; the license should provide for remedy periods and other modes of resolution before either cancellation or litigation is contemplated; and the contracting parties should have the right to back out of the arrangement under appropriate and defined circumstances.

2.4.6.5 Licenses: Access and Use

Here principles ten to seventeen are covered as follows: the license should provide access for all of the users affiliated with a licensee, whether institution or consortium, regardless of whether they are on the licensee's premises or away from them; the license should provide access to individual, unaffiliated users when on the licensee's premises; the license should provide access for geographically remote sites if they are part of the licensee's organization; remote access should be provided by way of a web-based, user friendly interface; data that is downloaded locally should be available in multiple standard formats (example: PDF, HTML, and SGML), portable to all major computing platforms and networked environments; at a minimum cost the license should permit users to read, download, and print materials for their own personal purposes, without restrictions; resources provided via remote access to providers' sites should be available on a 24-hour basis, with appropriate "help" or service support, except for short scheduled downtimes announced with adequate notice to the customer library(ies). Penalties may

accrue if service commitments are not met; and a high degree of content stability, both in single and in aggregated resources, should be guaranteed and the institutional customer should be notified of changes. Penalties may accrue if content commitments are not met.

2.4.6.6 Licenses and End Users

This covers principle eighteen to twenty one as follows: libraries should work with users to educate them about proper use of electronic resources and take reasonable measures to prevent unlawful use, as well as with providers to halt infringing activities if such become known. Nonetheless, the library should not incur legal liability for actions of individual users; it is not appropriate to ask the individual user to agree to a contract, such as a "click" contract, where the institution/library has already made -- or may engage in making -- an agreement on behalf of its patrons; users' privacy should be protected and respected in the license and in any intervention made by information providers or intermediaries; and the networked information provider should offer usage (as opposed to user) data so that the library licensee may assess the effectiveness of the use of the resource.

2.4.6.7 Licenses and Perpetual Access

This covers principle twenty two and twenty three as follows: a license should include provision for affordable, perpetual access to the licensed information by some appropriate and workable means; and a license should address provisions for long-term access and archiving of the electronic information resource(s) under consideration and should identify responsibilities for the following:

2.4.6.8 Licenses and Pricing

Principles twenty four to twenty eight are as follows: prices should be established so as to encourage use rather than discourage it; prices should be fully disclosed with no hidden charges; an unbundled (from print) price should be offered for electronic versions; a bundled price may be offered as well where this offers advantages for the licensee; there should be no penalty for cancelling print in order to take up the electronic version of a resource; and requirements for non-disclosure of license terms are generally inappropriate.

2.4.6.9 Interlibrary Loan

Interlibrary covers principle twenty nine and thirty. They are as follows: provisions for interlibrary loan or equivalent services should be included; and in general, libraries should be able to deliver reasonable length extracts from licensed information to libraries that have not signed a contract for that information for use by a specific patron.

2.4.6.10 Teaching and Learning

This covers principle thirty one and thirty two as follows: licenses should support local teaching and learning efforts at all levels of education; and licensors should recognize the affiliation of users with a given library or institution (especially distance learners)

2.4.7 Consortium Models

There are many hundreds and possibly thousands of library consortia around the world which are organized along many different lines. These can be categorized into broad categories of formal and informal. For the purpose of this study only models of formal consortia will be discussed. Formal consortia own infrastructure and assets and they apportion related costs and responsibilities. The ownership of infrastructure and associated assets could also belong to member institutions. The available literature on consortia discuss consortia models based on the following factors: geographical, funding, membership and discipline- based. Literature also revealed that models used vary from region to region. Some of them are discussed here below.

2.4.7.1 Membership Models

2.4.7.1a Open Consortia: This type of consortia is open ended and provides facility for the libraries to join and leave as they please. In this case, publishers define a minimum number of libraries for the consortium to take-off, at a specific rate per product. This type of consortia are generally driven by small homogeneous groups who have a need to cross-share the resources in a specific subject area. In India, INDEST, a consortium run by the Ministry of HRD, GOI, is an example to this model.

2.4.7.1b Closed Group Consortia: The closed group consortium stays exclusive within a defined group. This type of consortia emerges either by coalition, affiliation and collaboration among them. Here the formation and operation of the consortia guidelines

and its administration are fairly simple and easy. Examples are CSIR, DAE and IIM of India.

2.4.7.2 Funding Models

2.4.7.2a Centralized Funded Model: In this model, the very existence of the consortium will solely depend on the central funding agency. The strength of this model is that the financial responsibility of running the consortium is shouldered by the parent body. Examples of this model are, INDEST, UGC INFONET, CSIR, and ICMR Consortia of India.

2.4.7.2b Decentralized Funded Model: in this model no central body carries the funding burden and therefore members decide on the mode of funding. This could be through introduction of membership fee where each member library pays an annual fee determined by the rate of use. In this model also each member can do independent funding and sharing their resources with others.

2.4.7.2c Shared-Budget Model: In this model the participating libraries take the lead and form the consortium.. The operational aspects of the consortium especially the management of funds are individually handled. Entering into a Memorandum of Understanding (MoU) for a better and strong footing is always recommended for this kind of a model. IIM and FORSA of India are examples of this model.

2.4.7.3 Geographical Models

2.4.7.3a International Consortium: This is a consortium which brings together various consortia from all over the world to form a consortium of consortia. An example is the International Coalition of Library Consortia (ICOLC) based in USA. It currently comprises of over 200 library consortia from around the world.

2.4.7.3b National Consortium: In this kind of model, consortium is started to include all the libraries in a country. An example is the FinElib of Finland which was established in 1997. (Hormia-Poutanen, et. al. 2006).

2.4.7.3c Regional Consortium: This model involves libraries from a specific region for example a province or a state within a country. Good examples are the five academic library consortia of South Africa. These are: Cape Library Consortium (CALICO) 1992; Eastern Alliance of Library Systems (SEALS) 1998; Eastern Seaboard Association of Libraries (esAL) 1997; Gauteng & Environs Library consortium (GEALIC) 1996; and Free State Library & Information consortium (FRELICO) 1996/7.

2.4.7.4 Discipline-Based

These are library consortium started to serve a specific type of libraries e.g. academic, research or public libraries. Examples are; Hellenic Academic Library Link (HEAL-LINK) 1998 of Greece; Consortium of Health Independent Libraries in London (CHILL) of UK; and Consortium of Research Libraries 2005 of UK. There are also inter-disciplinary based consortia e.g. the National Electronic Information Consortium

(NEICON) of Russia whose members include universities, public libraries, academic institutions and non commercial organizations. (Hormia-Poutanen et. al. 2006).

2.4.8 Standards

A consortium will require certain standards especially those required for information sharing. Some are discussed below:

2.4.8.1 EZproxy which helps to provide users with remote access to Web-based licensed content offered by libraries. It is middleware that authenticates library users against local authentication systems and provides remote access to licensed content based on the user's authorization. EZproxy is an easy to setup and maintain program. It connects to a large number of content providers (including OCLC, FirstSearch, EBSCO, Gale, etc.); it also connects to a wide variety of authentication services (including LDAP, SIP, Athens and Shibboleth) which reduces the number of authorizations/passwords and provides a better end-user experience. (oclc.org).

EZproxy is a web proxy server extensively used by libraries to give access from outside the library's computer network to restricted-access websites that authenticate users by IP address. This allows library patrons at home or elsewhere to log in through their library's EZproxy server and gain access to bibliographic databases and the like to which their library subscribes. EZproxy is a URL-rewriting program that works by dynamically altering the URLs within the web pages provided by your database vendor. The server names within the URLs of these web pages are changed to reflect your EZproxy server

instead, causing your users to return to the EZproxy server as they access links on these web pages. The result is a seamless access environment for your users without the need for automatic proxy configuration files. Previous proxy solutions were complex and difficult to maintain, and when EZproxy was created, authentication systems like Shibboleth were still far in the future. The software is sometimes confused with generic proxy server software designed to control web access. It is sometimes referred to as a "proxy referral" server to distinguish it. (wikipedia.org)

2.4.8.2 Lightweight Directory Access Protocol (LDAP) is an application protocol for accessing and maintaining distributed directory information services over an Internet Protocol (IP) network.

2.4.8.3 Session Initiation Protocol (SIP) is a signaling protocol widely used for controlling communication sessions such as voice and video calls over Internet Protocol (IP). The protocol can be used for creating, modifying and terminating two-party (unicast) or multiparty (multicast) sessions. Sessions may consist of one or several media streams.

2.4.8.4 Shibboleth does not carry out authentication itself. Instead, Shibboleth defines a set of protocols for the secure passing of identity information between institutions and service providers. It relies on the institution to establish identity, and on the service provider to confirm access rights, given information about institutional affiliation. It is

written in SAML (Security Assertion Markup Language), an international standard developed by the OASIS Security Services Technical Committee.

2.4.8.5 Athens interface prompts users for a username and password, and then uses that information to establish access to Athens-protected services. Athens provides users with single sign-on access to numerous web-based services.

2.4.9 Summary of Related Studies

Although cooperation among libraries has been in existence for decades, the phenomenal growth of consortia over the past decade clearly has been fueled by the rapid transformation made possible through technology. Today, many libraries are already a part of one or more consortia, and those that are not are rapidly taking steps to develop these strategic partnerships with other libraries. Although the consortium movement initially was most pronounced in academic libraries, today public, school and even corporate libraries are exploring new ways to provide shared services and to reduce their costs through consortial purchasing. For this reason, many have mushroomed all over the world, example, SANLIC of South Africa, FinElib of Finland, INDEST of India, CHILL of UK, among others. Consortia vary in size and type of activities. There are also various models of consortia whose classification could be geographical, financial, or discipline. Consortia can be said to be growing organisms and undergo distinct developmental stages. These stages are embryonic, early development, development, maturation and disbanding stages.

Consortia has many benefits to offer to its members including but not limited to reduced prices of electronic resources, constant availability of resources, and an opportunity to network with others. On the other hand, consortia also face quite a number of challenges such as infrastructure and licensing issues among others. Since consortia building is aimed at increasing access to information resources especially in electronic format to many, standards for sharing information are required. Some of those which have made remarkable impact on consortia include EZproxy, LDAP and SIP.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers research design, the study population, study sample, methods of data collection, tools for data collection and methods of data analysis and presentation. Research, according to Welman and Kruger (2001), is the application of various methods and techniques in order to create scientifically obtained knowledge by using objective methods and procedures. Kothari (2004 pp1), defines research as a scientific and systematic search for pertinent information on a specific topic. Research methodology therefore is a way to systematically solve research problems (Kothari, 2004). Research methodology involves the forms of data collection, analysis and interpretation that the researchers propose for their studies (Creswell, 2009).

3.2 Research Design

A research design is the structure that holds together the research and enables one to address research questions in ways that are appropriate, efficient and effective. Kothari (2004) says "a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure". He further adds that research design is the conceptual structure within which research is conducted, and constitutes the blue print for the collection, measurement and analysis of data.

The nature of research determines the methods to be used in collecting and analyzing data. According to Creswell (2009), there are two main research paradigms which can be used by researchers to carry out their research. These are qualitative and quantitative research. He defines qualitative as a form of inquiry that explores phenomena in their natural settings and uses multi-methods to interpret, understand and bring meaning to them. While on the other hand, quantitative research focuses on measuring and testing relationships between variables systematically and statistically.

3.3 Type of Research Design for the Study

The study used qualitative method of data collection. The study focused on collection of in-depth information. Data was collected in form of text and verbal phrases. The researcher collected data in the field where participants experienced the issues or problems under study, in other words, in the natural settings. In this case, the natural set up was the libraries themselves and the respondents were the librarians in charge of acquisition of electronic resources. Interview method was used to collect data from the participants. The researcher interviewed the respondents one on one. The interview method was preferred because of its flexibility and ability to collect in-depth information. Interviews also allowed the researcher to collect more information considering that this was a kind of exploratory study whereby the researcher depended more on what the respondents provided. Furthermore, interviews are the best method for collecting data about the respondents themselves, their experiences, their opinions or attitudes, their knowledge, and their reactions.

Odini (1993) concur by saying that the method gives the opportunity to establish rapport and greater flexibility in collecting information since the interviewee and the interviewer are both present. Furthermore verbal responses of the respondents are often valuable and the original evidence of the research data. The tool used for data collection was semi-structured interview schedule. This was used for its flexibility. This is further discussed in section 3.7

3.4 The Study Population

A population is a group of individuals, objects, or items from which samples are taken for measurement. Mugenda & Mugenda (1999), defines a population as a complete set of individuals, cases or objects with some common observable characteristics. Target population is that population to which a researcher wants to generalize the results of a study. The study population was drawn from all member libraries of KLISC in Kenya. There were sixty three registered member libraries at the time of commencement of this study (the number could have since increased). For the purpose of this study, these were categorized into four groups as follows: University; and middle college; research institution libraries; museums, public and government (others) libraries. The population also included representatives from KLISC management, where KLISC is considered as one unit of the population. This came to a total of sixty four. Table 3.1 below shows the study population.

Table 3.1: The Study Population

Category	Total	Percent
Universities/university colleges	32	49
Middle Colleges	11	17
Research institutions	12	19
Other libraries	8	12
KLISC management	2	3
Total	65	100

3.5 The Study Sample

A sample is a small group selected from the whole population which is used in data collection and should be a representative of the whole group. The researcher should endeavoured to select a sample which is a representative of the whole population as much as possible. The characteristics of the population were not diverse and sample for the study consisted the librarians who were directly involved in the provision of electronic resources in members libraries of KLISC. Only one librarian was targeted from each member library to be included in the sample. The researcher also selected two representatives of KLISC management to be interviewed.

3.5.1 Sampling Methods

Sampling is the process of selecting a small group from the population to be used for data collection.. There are two sampling methods that can be used is selecting a sample for a research study. They are probability sampling and non-probability sampling. In probability sampling, people, places or things are randomly selected. Non-probability on the other hand is a sampling method whereby the probability that any element will be included in a sample cannot be specified and in some instances certain members may have no chance at all of being included (Welman and Kruger 2001 pp 61). The researcher should choose the appropriate method depending on the kind of population of the study. Each method has various technique of sampling to choose from. The sampling method applied in the study was probability.

3.5.2 Sampling Technique

A sampling technique is the exact method used to select a sample for a study. The sampling technique which was used by the researcher was stratified random sampling. The population was put into broad categories according to types of libraries and subjects were selected randomly from each category for interviewing. The researcher managed to interview fifty librarians and two KLISC officials as follows: university/university colleges 27; middle colleges 7; research institutions 10 other libraries 6 and 2 from LISC management

3.6 Method of Data Collection

Data collection refers to the gathering of specific information aimed at proving or refuting some facts. There are a variety of methods used in data collection. Among them is the interview method which was used for data collection for this study. The study mainly used qualitative inquiry where data was collected using personal interview method. Qualitative inquiry typically focuses on collection of in-depth information and personal interviews were used for this purpose.

3.6.1 The Interview Method

The interview method, according to Kothari (2004), involves presentation of oral or verbal responses. This method was used in personal interviews. Personal interviews involved face-to-face encounters where the interviewer asked the interviewees oral questions. The kind of interview used was semi-structured which gave the respondents the freedom to provide their own answers at the same time provided guidance in the discussions. The major advantage is that the researcher got more information from the respondents through non-verbal communication. Interviews also have a high response rate which adds to the validity of results. A part from a few instances the respondents were very cooperative and were very willing to provide the information being sought. In addition, interviews collect more data than anticipated by the researcher by allowing the respondents to provide their experiences, beliefs and values concerning the field of study. The method also allowed the interviewee and the interviewer to develop an understanding resulting to confidence and trust. This led to collection of more information.

3.7 The Tools for Data Collection

An interview schedule was used as a tool for data collection. It is a list of questions which the researcher asked during the interview. A semi-structured schedule contains both closed-ended and open-ended questions. This schedule was chosen for its flexibility. The structured questions were used as a guide to limit the respondents to the areas relevant to the study. These were followed by the open-ended questions which allowed the respondents to provide independent responses.

3.8 Procedure for Data Collection

Data was collected by interviewing the respondents from libraries who were members of KLISC. Before the interview, the researcher made appointments with the respondents to ensure that they were available. On arrival, the researcher provided the introduction letter and an interview schedule for each respondent. In some instances, the researcher was lucky to interview them on the same day. This was made possible by the respondents being very understanding. At other times, however, it was the opposite. The researcher was made to make several visits before interviewing and sometimes in vain. During the interview, data provided was recorded in hand written notes and an attempt to use a tape recorder proved useless after realizing that most of the respondents did not want to be recorded for whatever reasons.

3.9 Reliability and Validity

Reliability is the extent to which a measuring instrument or procedure yields the same result upon repeated trials. Reliability helps in the establishment of internal consistency, interpreting data and predicting the value scores. In qualitative research, validity means

that the researcher checks for the accuracy of the findings by employing certain procedures while with reliability the researchers approach is consistent across different researches and different projects (Creswell, 2009:190). For validity the researcher ensured there was trustworthiness, authenticity and credibility throughout the research process which was ensured through data collection, data analysis and interpretation. For this purpose, the researcher used triangulation by comparing related data from the two categories of respondents, that is, the librarians and the KLISC officials. To ensure reliability the researcher applied pre-test method as a way of assessing the reliability of data collection instruments. This was achieved through use of a selected group of my fellow students at Moi University who helped in assessing the quality of the questions, and sequencing. The pretest revealed that the questions were too many and some were repetitive. The researcher then removed the questions which were repetitive and reduced the unnecessary questions.

During data collection, pre-testing was done through a selected group of five librarians from five libraries that the researcher visited first. After interviewing them the researcher was able to check for the appropriateness of the research instrument. Through this the researcher established that some questions were not flowing well and changed the arrangement of the questions. Data from these five libraries were not included during data analysis.

3.10 Methods of Data Analysis and Presentation

Data analysis refers to examining what has been collected in a study, making deductions and drawing inferences. It involves uncovering of underlying structures, extracting

important variables, detecting any anomalies and testing any underlying assumptions. Data analysis can be approached from two angles: qualitative data analysis, and quantitative data analysis methods. This study employed qualitative data analysis procedures since data was collected through qualitative method.

Qualitative data is inform of text, written words, phrases or symbols describing or representing people, actions and events in life. The analysis of qualitative data varies from simple descriptive analysis to more elaborate reduction and multivariate associate techniques. Analysis of qualitative data involves analytical techniques which include: quick impressionist summary which involves summarizing of key terms, explanations, interpretation and conclusion; thematic analysis which basically categorizes related topics where major concepts or themes are identified; and content analysis which examines the intensity with which words have been used (Kombo & Tromp, 2006). Qualitative data analysis involves working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what it means to others. Furthermore, data analysis involves making sense of text, images and verbal phrases provided by the respondents. To analyse data collected, the researcher used thematic analysis which basically involved categorizing related topics where major concepts or themes were identified. Before the analysis, the researcher collated the collected data through use of a table with rows representing the respondents and the column for each question. Using the results of this exercise the data was put into categories according to emerging themes. Each category was then labeled with a distinctive term based on the actual language of the participants.

Each category was then coded. Tabulation was then used to present data and further analysis done to draw inferences from the data.

After data analysis, data can be presented in various ways including use of statistical techniques, graphical techniques or a combination of both. In this study data was presented through use of tables and percentages.

3.11 Ethical Issues

Ethical issues revolve around data collection, data analysis and interpretation. There are issues also at the time of dissemination of results. The researcher ensured that such ethical issues were considered carefully at all stages to ensure that participants were not maginalised or coerced in any way. During data collection, the researcher identified herself to the respondents before the exercise commenced. The purpose of the study was communicated to the participants. The researcher assured the respondents of confidentiality of information provided. Plagiarism was avoided through acknowledgement of sources of information.

During data analysis and interpretation, the researcher strove to provide accurate accounts of information collected. In reporting, the researcher provided a truthful representation of what was collected and did not in any way suppress, falsify or invent findings to meet the researcher's or the audience's needs.

3.12 Summary of the Chapter

This chapter presents research methodology used in sampling, data collection, data analysis and presentation and covers: research design; study population; study sample; and methods of data collection, analysis and presentation. The research design chosen was qualitative research where the researcher sought to establish the current situation with regard to the provision of electronic resources by KLISC to the members. The study population comprised all the members of KLISC country wide. The sample was selected from librarians from all the member libraries. The method of data collection used was the interview method. Lastly the collected data was analyzed using thematic analysis and presented by tables and percentages.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter addresses data analysis, presentation and interpretation of data collected from the field. The respondents comprised librarians from member libraries of KLISC. The data was obtained from respondents through face-to-face interviews. Data is basically presented in tabular form as well as textual. Qualitative data analysis method was used to analyse data. The content was coded thematically and frequency of responses was noted. This information was then presented in form of tables and percentages. The researcher then drew inferences from the findings so presented.

The chapter is divided into the following sections based on the study objectives:

1. General and Bio information
2. The activities of KLISC in the provision of electronic information resources in libraries in Kenya
3. The need for e-resources in consortium libraries
4. The how KLISC assisted in the provision of e-resources in consortium libraries
5. Problems experienced by consortium libraries in accessing the e-resources
6. Suggestions to improve availability of e-resources in member libraries

4.2 General and Bio information

4.2.1 Response Rate

The respondents were put into four major categories according to common attributes. The categories comprised universities both public and private/ university colleges; middle colleges; research institutions; and others-this includes all other libraries outside the above mentioned categories. In the university category 27 respondents were interviewed, in the middle colleges 7 were interviewed, in the research category 10 respondents were interviewed and in category of others 6 respondents were interviewed. Two members of KLISC management were also interviewed totaling to 52 respondents. Table 4.1 below presents the respondents who participated in the study:

Table 4.1: Response Rate (n=52)

Category	Respondents	Percent
University libraries	27	52
College libraries	7	13
Research institutions libraries	10	19
public, museums and government libraries	6	12
KLISC management	2	4
Total	52	100

4.2.2 Designation of the Respondents

The study focused on interviewing the persons responsible for managing library services in the various institutions. This ranged from library assistants to chief/university librarians. The data collected show that 77% of those interviewed were assistant librarians and above and 23% were senior library assistants and library assistants. Table 4.2 below has the details.

Table 4.2 Information about Respondents (n=52)

	Chief/ university librarians	**Librarians**	**Systems librarian**	**Assistant librarian**	**Senior lib.asst.**	**Library assistant**	**Total**
Universities	5	8	3	5	4	3	**28**
Colleges	-	3	-	2	1	-	**6**
Research	3	2	-	2	1	2	**10**
Others	2	3	-	1	-	-	**6**
Total	**10**	**16**	**3**	**10**	**6**	**5**	**50**

4.2.3 Experience of the Respondents

The study established that the experiences of those interviewed were diverse and ranged from 4 years to 29 years. It was found that 38% of the respondents had served for less than ten years, 56% for more than ten years and only 6% had served for more than twenty years. Table 4.3 below has more details:

Table 4.3: Experience of the Respondents in years (n=50)

Experience in yrs	**0 - 10**	**10 – 20**	**20 – 30**	**Total**
Chief/university librarians	-	9	1	**10**
Librarians	4	9	2	**15**
Systems librarians	2	2	-	**4**
Assistant librarians	4	6	-	**10**
Senior library assistants	4	2	-	**6**
Library assistants	5	-	-	**5**
Total	**20**	**29**	**3**	**50**

4.2.4 Number of Users in Each Category of Libraries

The study established that on average the public universities served between 5 000 to 40 000 users. It was also noted that some private universities have up to 10 000 users. In some research institutions there were as low as 300 users. The study established that KNLS, being the national library and with branches all over the country served the highest number of users numbering close to 4 000 000 as illustrated in table 4.4 below.

Table 4.4: Number of Users in Each Category of Libraries

Institutions	**Range**
Public universities	5 000 – 40 000
Private universities	3 000 -10 000
University colleges	2 000-7 000
Middle Colleges	1 000 – 2 500
Research	300 – 3 000
KNLS	Up to 4 000 000
Others	450 - 500

4.2.5 Registration, Annual Membership and Annual Subscription Fee

The study established that all libraries pay a registration fee of Kshs. 5 000. The registration fee was paid once. A uniform annual membership fee of Kshs.10 000 was also paid to support the operations of KLISC by all members. Members also paid INASP annual subscription to access electronic resources. This subscription varied among the categories as follows: public universities paid Kshs. 1.96 million; private universities paid Kshs. 450 000; and all the others including KNLS paid Kshs. 240 000 annually as shown in table 4.5 below.

Table 4.5: Payments for Membership and Subscription

Institutions	**Registration Fee (in kshs)**	**Annual Membership to KLSC (in Kshs.)**	**Annual subscription to INASP (in Kshs.)**
Universities	5 000	10 000	1 960 000
Private universities	5 000	10 000	450 000
University Colleges	5 000	10 000	240 000
Middle colleges	5 000	10 000	240 000
Others	5 000	10 000	240 000

3.2.6 Libraries with Branches

The researcher sought to establish the number of libraries that had branches. The study indicated that 58% of the libraries had branches while 42% did not have branches. It was also revealed that most of the research institutions had regional branches which were outside the country as shown in Table 4.6.

Table 4.6: Libraries with Branches (n=50)

Institutions	**Libraries with branches**	**Libraries with no branches**
Universities	18	9
Colleges	2	5
Research	7	3
Others	2	4
Totals	**29**	**21**

4.3 The Activities of KLISC in the Provision of Electronic Information Resources in Libraries in Kenya

Scientific information is very important especially in academic and research libraries for the generation of new knowledge. It is therefore important for libraries to provide this information in the best way possible to ensure proper utilization. With the advent of technology and the application of ICTs, libraries have turned to electronic information resources to provide scientific information and any other kinds of information and information services as may be required by their users. The first objective sought to establish the activities of KLISC in the provision of electronic information in libraries in Kenya. To achieve this data was collected about the type of resources available through KLISC and the information support offered by KLISC,

4.3.1 E-resources available through KLISC

The study indicated that KLISC availed 42 databases to members from various publishers and aggregators. The members had access to all these forty two databases and could select whatever was relevant to their patrons from these resources. These databases were from various publishers who specialize in diverse fields. Below is a list of these databases.

Table 4.7 List of Databases Accessible to KLISC

Electronic Journal Databases	
1. Acoustical Society of America (ASA)	22. African Journals Online
2. American Institute of Physics	23. American Physical Society
3. Annual Reviews	24. Beech Tree Publishing
4. British Library Document Supply Centre	25. British psychological Society
5. Cambridge University Press	26. Cochrane Library
6. EBSCO Host Research Databases	27. Edinburgh University Press
7. Emerald Group Publishing	28. GALE Cengage Learning: Expanded 29. Academic and Health & Wellness Resource Center
8. Geological Society	30. Institute of Electronic and Electrical Engineers (IEEE)
9. Institute of Physics Publishing (IOP)	31. JSTOR
10. Mary Ann Liebert	32. Mineralogical Society
11. National Academies Press	33. Nature Publishing
12. Organization for Economic Co-operation and Development (OECD)	34. Optical Society of America (OSA)
13. Oxford English Dictionary Online	35. Oxford Journals (OUP)
14. Palgrave Macmillan Journals	36. Project Muse
15. Royal College of Physicians	37. Royal Society Journals
16. Royal Society of Chemistry Archives	38. Royal Society of Chemistry: RSC Journals Archive
17. SAGE Publications	39. Springer Journals
18. Symposium Journals	40. University of California Press
19. University of Chicago Press	41. Wiley Blackwell - Inter Science Content
20. Wiley Blackwell – Synergy	42.World Bank: Africa Development Indicators
21. World Bank: Global Economic Monitor	

Source: (from KLISC website)

It was revealed that INASP works with the above publishers and aggregators to make their resources available within their partners and network countries. Each consortium from various countries is provided with resources which they can access according to terms agreed upon. Kenya is allowed access to all the publishers and aggregators listed above and from these, there are journals, journal articles, eBooks, abstracts of journals articles, full text journals, magazines, conference proceedings series, annual reviews, table of content searching, and document delivery among others. The publishers state the extent of access which is agreed upon during licensing. The following are examples of what some publishers offer to Kenya: **Project Muse** provides access to over 430 full-text journals from 70 publishers in humanities and social science; **Taylor and Francis online journals** have more than 1,300 titles in humanities, social sciences and applied sciences; and **Wiley online library HSS** provides access to over 500 journals in humanities and social sciences.

Most of these also provide back issues of their titles, for example, Acoustic Society of America (ASA) provides access to all back issues of journal of the Acoustical Society of America (JASA); back to vol. 1, no. 1, Oct 1929. For more information on the resources available to KLISC see appendix 3.

4.3.2 Information Support Offered by KLISC

To achieve the first objective the study sought further to establish the kind of information support provided to members by KLISC. The study showed that the information support offered by KLISC was uniform to all members as shown in table 4.8 below. Despite this

there were differences in responses among categories. For example, a service like database access was mentioned by ten respondents from all categories. Overall, communication of updates and training took the lead with 78% each. The responses were put into eleven categories according to the themes as follows in table 4.8 below:

Table 4.8: Summary of Information Support and Services Offered by KLISC (Multiple Responses)

Service	Respondents	Percent
Communication updates	39	78
Data base access	10	20
Exposure through listing	3	6
Licensing	6	12
Mediation	23	46
New Resource updates	15	30
Price negotiation	16	32
Sponsorship	10	20
Statistics	2	4
System problems	7	14
Training	39	78

These services are discussed here below:

4.3.2.1 Prompt Communication of New Developments by the KLISC Management

The study indicated that KLISC management endeavoured to communicate to the members any new developments from the publishers or the sponsors. The communication was on new products from publishers or programmes from sponsors and were as often as need a rose. It was found that members appreciated the prompt communication of any new developments concerning new products. This kept members abreast with emerging trends. It enabled them to adapt quickly and in so doing, improve the provision of electronic information and services to their clientele. Such communication include information on newly introduced products e.g. eBooks and software; publishers and aggregators; and other resources. This service was important to 39 (78%) as indicated in Table 4.8 above. Communication was considered necessary for continual improvement of services and other products.

4.3.2.2 Training Staff in ICT Skills

ICT skills are important in the provision and utilization of e-resources. It was revealed that KLISC organizes training for all its new members. The training targets those who offer electronic services in the libraries. It was also evident that the training was sponsored by INASP and members did not pay for them. From the responses obtained it was clear that this service was very important. All members in the four categories were very much aware and had benefited from it. A total of 39 (78%) respondents talked about it. The training equipped staff with the necessary skills in the provision of electronic resources and services as well as ICT applications. This was achieved through workshops and seminars organised locally and outside the country. The training targeted mostly those directly dealing with provision of electronic services in member libraries. It was

available to all the new members who joined KLISC for the first time. The service is held regularly to keep members abreast of new technologies in the field of electronic resources. This includes creating awareness on newly developed electronic tools such as new software and other tools for information transfer and sharing. The study, however, established that very few members trained the end users after they were trained and this defeated the purpose for which it was established.

4.3.2.3 Mediation between Users and Publishers

The study showed that there were quite a number of issues concerning the members and the publishers or suppliers. It was evident that problems were encountered now and then especially by new members who were not familiar with the processes involved especially that of registration. In this connection, it was found that whenever the management was approached, they did assist. However, it was also established that some new members were not even aware of this assistance and took a long time before they completed registration. Some cases took as long as a whole year before utilizing the resources after registration and payment of subscription fee. This was supported by 23 (46%) respondents (Table 4.7 above) meaning that a good percentage of members had benefited from this mediation while others were not aware.

4.3.2.4 Negotiations for Better Prices

Formation of consortia enables libraries to get sponsors who are willing to subsidize the cost of provision of electronic resources in member libraries. They also play another important role of negotiating for better prices on behalf of members. Due to the ability of bulk buying publishers were willing to reduce prices for the consortia. The study

indicated that KLISC partners with INASP which negotiates on their behalf. The negotiations ensured that members got pertinent resources at low cost. This activity was mentioned by 16 (32%) of the respondents. See (table 4.7 above).

4.3.2.5 Introduction of New Resources

It was revealed that KLISC is always on the lookout for new services and resources which can benefit its members. These include emerging tools, software and new resources. A good example is the eBooks which KLISC was in the process of introducing. At the time this study was contacted, KLISC had introduced eBooks on a trial basis for the members to decide whether they would want it included as part of the package. A total of 15 (30%) respondents were aware of these new eBooks.

4.3.2.6 Licensing

A license is an agreement authorizing use of e-resources between the publishers and other suppliers and KLISC. It was found that licensing for the use of the electronic resources by KLISC members was done by the sponsoring body, INASP, in conjunction with the country coordinator. It appeared that majority of members had no idea about it. Only 6 (12%) mentioned it. This indicates that many members are not aware of the pricing procedures contrary to what IFLA (2001), recommends that all users should be aware of how the prices were arrived at and that there should be no hidden costs.

4.3.2.7 System Problems

According to the data collected, there were certain requirements which had to be met before members could access the e-resources. One of these requirements was installation of an information system. This was the responsibility of the member libraries but KLISC management advised those who had problems. Only 7 (14%) of the respondents had experienced problems.

4.3.2.8 Statistics of Use

Study revealed that KLISC kept record of how the resources are used by users in the member libraries. Usage statistics are important as a metric for value of acquired information. It was also found that this information could be provided to any member if they requested for it. According to findings only 2 (4%) were aware of this service as indicated in Table 4.7 above. This finding indicates that members are not keen to establish the usability or the level of usage of the electronic resources by their users.

4.3.2.9 Sponsorship of Programmes

INASP's work focuses on communication, knowledge and networks, with particular emphasis on the needs of developing and emerging countries. Members were encouraged to come up with programmes in these areas. INASP responded to these according to how they met the criteria of: priorities for access to national and international scholarly information and knowledge via ICTs; national, regional and international co-operation; networking and knowledge exchange. They also advised and advocated for improved policy and practice in achieving sustainable and equitable development through effective communication, knowledge and networks. The members forwarded the proposals for

approval through KLISC. Only 10 (20%) respondents had indicated awareness of this provision.

4.3.2.10 Exposure to the World through Listing

The study showed that 3 (6%) of the respondents felt that registering of member libraries with the suppliers was a way of gaining exposure to the outside world and away of being recognized by others out there as indicated in Table 4.8 above.

4.4 The Need for E-Resources

The purpose of provision of information resources and services by libraries is to help meet specific needs of their users. This objective sought to find out what perceptions members had concerning the need for e-resources by their users. The data collected showed that these needs vary across categories but there are similarities between all academic libraries. In these libraries the needs for the e-resources were many as illustrated in the table 4.8 below. All were mentioned except “saving on storage space”. The most common needs across categories were the need for electronic resources for research work (86%), and easy access to information (70%). It is clear from the data collected that there were many reasons why electronic resources are necessary for library end users. Table 4.9 below has the details.

Table 4.9: Need for E- Resources (Multiple Responses)

Need for e-resources	**Frequency**	**Percent**
Research work	43	86
Course work	26	52
Bibliographic information	27	54
Easy access to information	35	70
Save storage space	6	12
Low Maintenance cost	14	28
Variety of resource information	9	18
Easy access to scholarly information	19	38
Technological development-ICT	15	30
Ease of Use	18	36
Easy distribution of information	21	42
User Demand	21	42

The needs expressed by members were put into twelve categories as follows: research work; provision of bibliographic information; save on storage space; access to a variety of resources; development in technology especially ICT; easy distribution of information; course work for students; access to scholarly information; ease of use; user demand; low maintenance cost; and easy access to information. They are further discussed below:

4.4.1 Research Work

The study indicated that electronic resources provided are very useful for research purposes. This was because most of the electronic resources provided contained scientific information in form of journal articles. This need was expressed in all categories more so in research institutions where scholarly information is mostly relied on. A total of 43 (86%) of those interviewed indicated there was great need for electronic information for research,

4.4.2 Provision of Bibliographic Information

Bibliographic information is very important for information location and retrieval. The study established that this need was expressed most in universities and research institutions where research work is mostly done. A total of 27 (54%) respondents articulated the need for bibliographic information.

4.4.3 Save on Storage Space

Although storage space is becoming scarce in most information centres, data collected show that this was a major issue facing research institutions more than other category of libraries. Electronic information saves on space compared to other formats especially book materials. Only 6 (12%) articulated this need.

4.4.4 Access to a Variety of Resources

Various sources of information on the same subject present different viewpoints of the subject which facilitates understanding of the subject. From the collected data, this need was mostly felt in the academic institutions where diverse programs are offered. The e-

resources offered them a good coverage of the subject areas. This need was expressed by 9 (18%) respondents.

4.4.5 Development in Technology Especially ICT

Advancement in technology has changed the way information is produced, collected, stored and accessed. The users also have become more techno-savvy and are demanding provision of information through the available technologies. The study showed that 15 (30%) expressed this need.

4.4.6 Easy Distribution of Information

In Kenya the number of people pursuing further studies is increasing and universities and colleges are admitting more students than ever. Easy distribution of information assists the library staff to serve the users faster. This would in turn ease congestion in the libraries as well as save users time. The study indicated that there was need for easy distribution of information among users 21 (42%) expressed the need for easy distribution of information to their clientele.

4.4.7 Course Work for Students

Part of the course work for students is assignments or term papers which they do independently and present for marking. For them to do this successfully, they require relevant information sources to get pertinent information. This need was mostly expressed by those in academic institutions where 26 (52%) respondents articulated this need.

4.4.8 Access to Scholarly Information

This is a tenet of academic institutions and research institutions and mostly involve research work. However, other libraries, like the public libraries, need them too to meet the diverse needs of their users. A total of 19 (38%) of the respondents were aware of this need.

4.4.9 Ease of Use

Ease of use is facilitated by use of electronic devices which ensure speed, friendly user interface as well as provision of various access points. The study established that 16 (32%) of the respondent had this need met through the provision of electronic resources.

4.4.10 User Demand

Libraries are met with increasing and dynamic nature of user demands which they should strive to meet. There is therefore the need for libraries to meet all the demands of their clientele. It is also evident that no library can be self sufficient and there was need for cooperation among libraries to provide electronic information to their members. This need was express by 12 (42%) respondents.

4.5 The Extent to which KLISC has assisted in the Provision of E-Resources

The objective sought to determine how KLISC has assisted member libraries in accessing e-resources. To achieve this objective data was collected under the following subtitles: number of journals subscribed to before joining KLISC; money spent on subscription

before joining KLISC; money paid after joining; number of users served; and benefits of joining KLISC.

4.5.1 The Number of Journals Subscribed to before KLISC

Responses to this question indicated that majority of the libraries subscribed to very few journals before joining KLISC. The major reason cited was the cost of the journals and lack of sufficient funds to subscribe. For this matter many libraries had to do without them. It was established that most of the libraries subscribed to below 200 journals in a year and in actual fact majority subscribed to nothing at all. Subscription to substantial number of journal was mostly in universities and research institutions. The study show that 58% of the respondents indicated that they subscribed to 200 journals and below. Data also show that the problem of under subscription was in all libraries as illustrated in Table 4.10 below.

Table 4.10: Number of Journals Subscribed to before KLISC (n=50)

Subscriptions	Frequency	Percent
0 -200	29	58
201 – 400	7	14
Over 400	5	10
No information	9	18

4.5.2 Money Spent on Subscription before KLISC

On the question of money spent on subscription before joining KLISC, it was established that money spent was equivalent to subscription done. Majority of libraries spent under five million shillings to subscribe to very few journals. However a few universities and research institutions spent quite a substantial amount of up to over ten million shillings on subscription per year. It was noted that even after paying so much, very few journals were received (3 000 as compared to 35 000 journals under KLISC). None of those interviewed said that they were able to have the required journals at any one given time.

Among the academic institutions it was clear from data collected that most of the colleges did not subscribe to any journals. On the side of universities many of them tried to subscribe but others did not especially the university colleges. On the side others, subscription was minimal. All of these categories cited the expense of subscription to journals as an individual institution or organization which made it impossible to afford. The findings are summarized in Table 4.11 below.

Table 4.11: Money Spent on Subscription before (n=50)

Amount	Frequency	Percent
0 - 5M	27	54
5M – 10M	10	20
Over 10M	4	8
No information	9	18

4.5.3 Money Paid After Joining KLISC

The study sought to know how much members paid after joining KLISC. It was established that the payment ranged from Kshs. 1.9 million to Kshs. 240 000. What was paid by members was basically determined by the number of their users. Those with more members paid more. For this matter, public universities paid more followed by private universities and then the rest of the other institutions. There were three major categories. The first was that of public universities who paid Ksh 1.96 million; the second category was that of private universities who paid Ksh 450 000; the last category constitute the other members who include research institutions, university colleges, middle colleges, public libraries , museums and government institutions who paid Ksh 240 000. On top of the annual subscriptions all members paid registration fee of Ksh 5 000 and an annual membership of Ksh. 10 000 (Table 4.11 below). When comparison is done between what was spent and received before and after, there was a clear indication that there was a lot of savings on what members were paying as well as an increase of the number of resources being availed. If we take the case of universities, cost reduced from over ten million to around 2million an equivalent of 80% cost reduction. On the other hand, journals received increased from 3 000 to 35,000, an increase of about 1170% increase. This is to say there is an enormous increase of e-resources.

However, it was noted that the research libraries continued their initial subscriptions even after joining KLISC. This was because the resources provided through the consortium did not include their core resources. There were also cases of publishers denying access to some of their resources to the international research organizations even when available to

KLISC. Such publishers felt that these international organizations could afford to subscribe directly. A good example is Nature publishing Group whose databases are available to KLISC but ILRI who needs them cannot have access.

Table 4.12: Money Paid for Registration, Membership and Subscription

Category	**Registration Fee**	**Annual Subscription to KLISC (membership fee)**	**Annual Subscription to INASP**
Public Universities	5000	10000	Kshs 1 960 000
Private universities	5000	10000	Kshs 450 000
University colleges	5000	10000	Kshs 240 000
Research institutions	5000	10000	Kshs 240 000
Others	5000	10000	Kshs 240 000

4.5.4 Number of Users Served by the Libraries

The number of users usually affects the quantity of resources required. It was found that the number of users served in these libraries varied among categories. In public universities users ranged from 5 000 to 40 000, in private universities, the range was between 3 000 and 10 000, in university colleges the range was between 2 000 and 7 000, in research institutions it ranged from 300 to 3 000, in middle colleges it ranged from 1000 to 2 500, KNLS up to 4 million country wide and others form 450-500 (Table 4.4).

4.5.5 Benefits of Joining KLISC

From data collected it was clear that the e-resources were very beneficial. This was so for all the categories. All those interviewed were very happy with the resources and services received through KLISC. The benefits range from a score of 40 (80%) to 9 (18%) see Table 4.12 below. Some of the benefits are discussed below:

4.5.5.1 Free Training

All those interviewed had benefited from free training on the provision of electronic resources. This equipped the service providers as well as users with the necessary skills to ensure maximum utilization of electronic resources.

4.5.5.2 Networking

Members also were happy with the opportunity provided of networking with others. Coming together has also enabled members to establish networks which work perfectly for them. Through the networking they are able to share resources with one another and also share ideas. This network mostly utilizes e-mails for document delivery and other forms of communication.

4.5.5.3 Cost Reduction

Subscription to the e-resources through KLISC has reduced costs of subscription tremendously. If for example we take the universities and research institutions who paid upto Kshs 10 M to get access to very few journals, they were now paying a maximum of Kshs 1.9 M in the case of universities and Kshs 240 000 for the research institutions for the access to 42 databases with millions of journal articles available.

4.5.5.4 Constant Availability of Information

E-resources ensure that information is available anytime and anywhere as long as there is connectivity. This is beneficial because it allows people flexibility to do their work any time they want. There is also the other factor of availability anywhere, even at home. With the application of the right tools, users in member libraries can access information from anywhere as long as they are connected to the internet. There are also the benefits of easy access to information and also wider access to information. Provision of electronic information makes it easy to access information since all it takes is just clicking of the button. Use of electronic device also allows downloading of these resources which can be saved or printed for future use. Through provision of e-resources there is also a wider access to information. There is access to so many databases which provide a wide range of resources to choose from. This ensures that user satisfaction is guaranteed.

4.5.5.5 Access to Current Information

Electronic resources are most current in that electronic publishing is real time, that is, information can be availed as soon as it has been published as opposed to print publishing which takes a long time to provide the published material.

Table 4.13: Benefits of Joining KLISC (multiple responses)

Benefit	Respondents	Percent
Free training	40	80
Networking with others	40	80
Cost reduction	38	76
Reliable availability	36	72
Wide access to information	34	68
Easy access to e resources	26	52
provision of current information	24	48
Resource sharing	17	34
Reduction of paper work	10	20
Leads to international recognition	9	18

Table 4.13 above show what the respondents thought was beneficial to them. The information in the table clearly indicates that the benefits were many and important to the majority of respondents.

4.6 Problems Experienced by Consortium Members in Accessing the E-Resource

The fourth objective sought to find out the problems experienced by consortium members in accessing the e-resources. The study was revealed that there were a number of problems experienced in accessing electronic resources. The responses are analyzed in Table 4.14 below.

Table 4.14: Problems of Access to The Resources (Multiple Responses)

Access to the resources	Respondents	Percent
Poor ICT infrastructure	12	24
Slow speed	5	10
Password requirement for some publishers	45	90
Slow communication by publishers	36	72
Some publishers do not allow access to full text	9	18
Embargo period (between six months and one year	16	32
Poor connectivity	5	10
Resources not available to all members but are available to KLISC	5	10
Lack of skills	11	22
Use of IP restricts use within the institutions	43	86
New member experience delays when registering with individual publishers	8	16
Subscription fee is high for some members	4	8
Available resources do not cater for major information needs	8	16
Not able to share in case of regional branches	4	8

Data show that 45 (90%) respondents cited password requirements for some publishers during access by end users as a major challenge, 43 (86%) had Internet Protocol (IP) authentication problems which restricted use of the resources within the institution. IP verification was sometimes problematic for members especially when the IT department changed the IP address without informing the library management so as to inform the publishers about the change. 36 (72%) had problems of slow communication process

between them and the publishers during registration, embargo period was a problem cited by 16 (32%) respondents, while 12 (24%) respondent experienced problems of poor ICT infrastructure. Lack of ICT skills was yet another problem among 11(22%) respondents. A total of 9 (18%) had a problem of some publishers not allowing access to full text journals articles and 8 (16%) experienced delays during registration as new members and the problem of the available resources not catering for all their users needs. A total of 5 (10%) respondents experienced three problems of slow speed, poor connectivity, the problem of some resources available to KLISC not being available to some members. Lastly, 4 (8%) had a problem of high subscription and not being able to share the resources in the case of members with regional branches. Table 4.13 below has more details.

4.6.1 Poor ICT Infrastructure

ICT infrastructure is a major requirement for the provision of electronic resources. This includes availability of Internet connections, availability of computers, both, hardware and software, ICT and computer skills and the right band width for speed access. The findings show that the respondents had problems of internet connections, lack of enough computers and lack of skills.

4.6.2 Slow Speed

Use of electronic devices has an advantage of increased speed and thus saving time for the users. It was established that slow speed was a major problem experienced in many libraries. This problem is associated with low band width which caused congestion especially when many users were logged in at the same time.

4.6.3 Password Requirements

It was established that password requirement was a problem experienced by the majority of the respondents. Findings show that some publishers required that members provide their users with passwords which they should use whenever they logged in their databases. These passwords were provided by the publishers themselves. This was a major problem due to the many publishers with this condition. Table 4.13 above has the details.

4.6.4 Slow Communication

The study established that some publishers were very slow in communicating back to the the members especially during registration of members. Some publishers took a long time before communicating back to the members. This meant that access was denied during the period.

4.6.5 Denied Access to Full Text

It was established that some publishers did not allow access to full text articles but instead provided only the abstracts to the articles. This sometimes did not provide adequate information and members wanted this to be addressed.

4.6.6 Embargo Period

It was established that another major problem was that of the embargo period imposed by publishers on electronic journals. The period ranges from six months to one year. This is the period when a newly published journal is not availed for access to electronic subscribers. This is done to allow the print journal to be subscribed to first. This is a

problem because it means that those subscribing to e-journals do not have access immediately after a journal has been published.

4.6.7 IP Limitations

It was established that publishers used IPs for identification of member libraries and end users could only access through these IPs. This imposed restrictions on access because users could only access these resources within the registered institutions thus denying remote access to users. This showed lack of flexibility and inability to access anywhere and anytime.

4.6.8 Resources not Available to All

It was established that some publishers restricted access from some members. In other words, some members were allowed access while others were not. Some publishers denied access to some international organizations that they felt could afford to subscribe individually. Another case was that of yet other publishers denying access to public libraries arguing that this was like allowing access to everybody.

4.6.9 Lack of Skills

ICT skills play a major role in the provision and utilization of electronic resources. It was established that the training being offered was not sufficient and there was need to train all those involved in the provision of electronic resources. It was also clear that there was need for the trained staff to train the end users as well.

4.6.10 High Subscription

The issue of finances has existed in libraries since time in memorial. It was established that even though the subscription to the consortium was highly subsidized, some respondents cited problems in raising the amount every year.

4.6.11 Insufficient Resources

It was established that resources provided through KLISC were of great help to most members. It was also clear that some members had very special needs which could not be fully catered for by the available resources despite the diversity. The diversity of the needs superseded that of the resources and some members, especially the research libraries, used these resources as supplementary to what they needed.

4.6.12 sharing among Regional Branches

It was established that sharing the resources among regional branches was not possible. The branches outside Kenya could not access the resources directly since KLISC was for Kenyan access only. The options these libraries had were sharing the resources using emails and other forms of document delivery. They also had the option of joining other local consortia in their countries of resident. Tables 4.15 and 4.16 below show the responses to the questions on problems of access by users and sharing among branches respectively.

Table 4.15: Conditions for Access to Information (Multiple Responses)

Conditions for access	Frequency	Percent
Passwords required by some publishers in order to access their databases	45	90
IP verification is a problem when the ICT people change IPs without involving the librarians	8	16
Restricted use of IP within the institutions	48	96

Table 4.16: Access by Branches (Multiple Responses)

Problems encountered	Respondents	percent
Poor infrastructure	15	52
Networking problems	12	41
IP listing	12	41

4.7 Proposed Solutions to Improve Availability of E-resources

This section presents the solutions proposed by members to the problems facing KLISC.

4.7.1 Promotion of KLISC

Majority of members suggested that it was important for the KLISC management to engage in the promotion of the services offered to all libraries in Kenya since it is a national consortium. This will result in increased membership which would in turn reduce the cost of subscription or increase resources to accommodate all members' needs.

4.7.2 Improve Infrastructure

The issue of infrastructure was urgent since some members lack the basics like enough computers, skills, and other facilities. Members recommended that KLISC should come up with a programme to support those members who have problems of developing infrastructure.

4.7.3 Fair Treatment

Respondents view was that all members should be allowed to access all the resources availed through KLISC without discrimination especially research institutions and public libraries.

4.7.4 Secretariat for KLISC

Some members expressed the need for independent secretariat body be established to run KLISC as opposed to the present situation where KLISC is run from University of Nairobi. They felt that money paid to the University of Nairobi would go a long way in running of an independent body.

4.7.5 KLISC Accounts

It was proposed that KLISC accounts be separated from that of University of Nairobi as it were the situation at the time of this study.

4.7.6 Effective Communication of Needs

The management suggested that members should communicate their specific needs to the management to facilitate selection of pertinent resources for various groups.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the main findings, conclusions, and recommendations. The summary is provided with reference to the aim, objectives, research questions and assumptions. The aim of the study was to determine the effectiveness of KLISC in the provision of electronic resources in libraries in Kenya. The study was pegged to five objectives which sought to establish the activities of KLISC in the provision of electronic information resources in Kenya; the need for e-resources; the extent to which KLISC has assisted in the provision of e-resources to consortium libraries in the country; problems experienced by consortium members; and proposed solutions to improve the availability of e-resources to consortium members.

5.2 Summary of Findings and Discussions

This research was guided by five objectives and research questions whose answers form the basis of the findings of the study. The summary of the findings are discussed below.

5.2.1 Activities of KLISC in the Provision of Electronic Resources

The process and the findings of this objective have provided a window into the activities of KLISC and the information services offered to the members. The research confirms that consortia play an important role in the provision of electronic resources to its members. The major activities of KLISC were:

- Coordination of activities between the consortium and member libraries, sponsors and publishers by the country coordinator.
- Overseeing the licensing process
- Participate in price negotiations
- Acquisition of electronic resources
- Selection of the electronic resource

KLISC provided a country coordinator who coordinated activities between the consortium and the International Networks for Availability of Scientific Publications (INASP), who was the major partner of KLISC. The coordination involved liaising with the sponsors and the publishers for the purpose of price negotiations and licensing process.

5.2.2 Information Support Offered by KLISC

The findings were that through KLISC members were able to get access to forty two electronic databases. From these databases members had access to journals, journal articles, eBooks, abstracts of journal articles, full text journals, magazines, conference proceedings series, annual reviews, table of content searching, and document delivery among others. The following is the information support offered by KLISC to the members:

- Training staff in ICT skills for effective provision of services
- Prompt communication of new developments by the KLISC management.
- Mediation between users and publishers

- Negotiations for better prices
- Introduction of new resources
- Licensing
- Solving of system problems
- Provision of Statistics of use
- Facilitate sponsorship of programmes by the sponsors

For effective provision and use of electronic information and services, ICT skills are crucial. Findings show that KLISC facilitated trainings among members to ensure that librarians in member libraries were equipped with necessary skills for effective provision of electronic resources (Shibanda, 2006). KLISC provided information support and other services which helped in the smooth running of service. The findings showed that these information services were essential and well appreciated. The most appreciated were communication of updates and training with both 39 (78%) followed by mediation with 23 (46%) respondents. Among many others mentioned was provision of information on usage statistics which acts as a metric for value of acquired information (Burke 2010; SreeKumar and Sunitha 2009).

The coordinator also played an important intermediary role between the partners, publishers and the members of the consortium. This entailed facilitating communication between them whenever need arose. Major concerns were issues of access to individual databases where by publishers or suppliers had their own conditions to be met. The process involved registration of members. Each member had to register individually with

all the publishers. The coordinator also communicated any new updates to members. This included information on new services or products which members needed to know about. The coordinator also presented members' needs to INASP for considerations as well as calling for meetings to discuss issues concerning the consortium. The most important role played by the coordinator was to ensure that the negotiations for prices favoured the consortium in terms of low prices. In close connection to this was the licensing procedure which is necessary for access and conditions for access.

5.2.3 The Need for E-Resources

The purpose of provision of information resources and services by libraries is to help meet specific needs of their users. It was found that electronic resources were needed by all members. Findings indicate that these needs varied across categories but there were similarities between all academic libraries. Below is a list of identified needs for electronic resources in member libraries:

- Access to scientific information for research work
- Provision of bibliographic information for location and access to information
- Save on storage space since electronic resources occupy less space
- Access to a variety of resources
- Development in technology especially ICT
- Easy distribution of information
- Access to diverse information for course work for students
- Ease of use of information
- Saves time of access

- User demand due to available technologies

The most common needs across categories were the need for electronic resources for research work, (86%), and easy access to information at (70%). Generally it was clear from the findings that there were many reasons why electronic resources were necessary for the library end users. The study revealed that one of the greatest needs for e-resources was for the provision of scientific information for researchers and scholars for generation of new knowledge for development in the economic, political and socio-cultural sectors. Findings showed that 27 (54%) of the respondents expressed the need for bibliographic information which help scholars locate more pertinent information materials on specific areas of study. The availability of bibliographic information in machine readable format is important for seamless information transfer. This means that a scholar is able to access required inform irrespective of its location. To facilitate use of electronic resources, use of various electronic devices is mandatory. These in turn improve the process of provision of the resources through enhancing ease of use, easy distribution, speed which saves users time, and multiple access points among others. Findings further showed that electronic resources also assist in saving storage space which is continually getting scarce in libraries. This concurs with Kaul 2001 who said that electronic information saves on space compared to other formats especially book material. The other need clearly expressed by the respondents was due to development in technology especially ICT. The study showed that 15 (30%) respondents concur with Shibanda 2006 on this in that users have become more techno-savvy and are demanding provision of information through the available technologies.

There was also the need to have access to a variety of resources which was expressed by 6 (12%) respondents. These provide different view points on subjects as well as diversity which are well suited for academic institutions where many programmes are offered. In close connection to this was the need for electronic resources for course work purposes. The study showed that 26 (52%) of the respondents expressed this need. There was need of electronic resources for ease of use of information and it was found that 16 (32%) of the respondents expressed there was need for ease of use of information provided. Lastly there was need for provision of electronic information due to user demand and according to the study 12 (44%) respondent met with this demand.

5.2.4 How KLISC has assisted in the Provision of Electronic Resources

The study showed that KLISC had tremendously impacted on the provision of e-resources to its members. Below is a summary of the benefits of KLISC to members:

- Networking among members whereby KLISC has caused members to meet through various forums leading to knowing one another and keeping in touch.
- Cost reduction due to shared cost and the bargaining power of the consortium.
- Easy access to e-resources which is facilitated by use of ICTs in the communication of information.
- Reduction of paper work through use of electronic format
- Free training which KLISC offers through the sponsorship of INASP
- Resource sharing which has been made possible through networking.
- Wide access to information resources which KLISC avails to its members.
- Provision of current information keeps members well informed and involved.

- Constant availability of information is ensured as long as members subscribe.
- Leads to international recognition through listing as member become part of an international organization.

It was very clear that majority of the libraries were unable to provide the most needed information to users due to lack of funds. Journals, especially those in print format were out of reach for many members. The main reason cited was the high cost of journals and lack of sufficient funds to subscribe. It was established that all members did was to pay the annual subscription fee which was very little compared to what they should have paid as individual libraries. Before joining KLISC, only in universities and research institutions were there substantial spending on journals. This finding is supported by paper by Were (2010). This represented only 8% of the members. The situation was worse in other institutions where subscriptions were minimal or none at all. This category represented 54% of members which is clearly the majority. Many of these cases cited lack of funds to purchase the journals compounded by the escalating prices of journals, both in print and electronic. Those who attempted to subscribe ended up spending up to three times of what they were paying to subscribe to just one database. According to the study, 54% were paying up to five million, 20% up to ten million and 8% were paying more than ten million annually while the rest did not subscribe to any at all. In comparison to this the study showed that, at the time of the study, those who paid the most to access the resources by KLISC paid 1.96 million only (see table 4.12).

KLISC has also benefited members in very many other ways. The meetings organized through KLISC have assisted in bringing members together and have managed to create networks through which they share ideas as well as resources. They have obtained contacts of other librarians and through the sharing have established those whom they can turn to whenever they face challenges in their work. This has proven very beneficial to many members. Likewise, information sharing has been made easy by use of email where one sends any required information through the use of emails or other forms of document delivery. The forums also provide opportunities for sharing ideas and innovations as librarians.

Joining KLISC has also ensured constant availability to resources and through the use of information standards, information could be provided anytime and anywhere as long as the users were connected to the internet. A good example of such standards which some members were using is the “EZproxy” which was available for sale. This standard allows libraries to provide resources to members away from their vicinity overcoming the limitations of IP authentication. One of the members (Strathmore) was also in the process of developing software locally for the same purpose.

Other benefits established through the study included saving on space through provision of electronic services (Kaul, 2001; Shibanda, 2006). On the other hand KLISC supported the development of ICT infrastructure to facilitate access and communication of electronic information.

5.2.5 Problems Experienced in Accessing E-Resources

Many members had problems of poor ICT infrastructure. This made it difficult for them to utilize fully the available resources through KLISC. Below is a summary of the problems faced by members in the provision of electronic information:

- Poor ICT infrastructure among member libraries
- Slow speed in accessing the electronic resources
- Password requirements by individual publishers during access
- IP verification which limited access within the institutions
- Slow communication between member libraries and publishers especially during registration
- Denied access to full text by some publishers to some members
- Embargo period of between six months to one year imposed on newly published electronic journals
- Lack of ICT skills for both librarians and users
- High subscription for some libraries
- Insufficient resources for some libraries
- Sharing among regional Branches not possible since KLISC is only available to libraries in Kenya.

The study established that some members had problems of internet connectivity and lack of sufficient number of computers compared to the number of users served. The study also showed that there was lack of skills among staff of member libraries despite the efforts being made by KLISC. There were insufficient ICT skills among the users.

Use of IP for authentication for access of the electronic resources was yet another problem. This condition restricted use within the institutions which meant that users could not access information away from the institutions and they could not work from their homes or any other place of their choice yet electronic resources are available anytime and anywhere as long as there was connection to the internet. In other cases, the available resources did not cater for major information needs of all the members. For instance, in the research institutions most of what was needed lay outside what was negotiated for through KLISC. However, majority were still happy with what KLISC availed. However, it did not auger well with such institutions when some publishers further denied them access to some resources available to KLISC. A good example was access to Nature which was denied to some research institutions. Members who have regional branches also had their share of problems. The branches outside Kenya could not access these resources since KLISC was confined to Kenya and resources through KLISC could only be accessed in Kenya. So branches in other regions are forced to join other consortia in their countries of residence.

The study also revealed that there was slow communication from publishers. This was experienced during registration with the publishers. Some publishers took a long time

before they responded to allow members to access their databases. It was also evident that some publishers did not allow access to the full text of their journal articles. This was in case of some publishers who denied access of full text to some members of KLISC. The affected members are public libraries (e.g. Emeralds) and the international research organization (e.g. Nature). The imposition of the embargo period of between six months and one year was another problem expressed by members. This meant that members could not have access to such journals until after the embargo has been lifted.

The study indicated that password requirement by some publishers posed problems to members in that the libraries had to provide a password from each publisher to users who would wish to access those databases. It was established that 90% of the libraries found this a major problem. The other problem cited was that of IP verification. It was found that there were times when the IT people in an institution would change the IP for whatever reason. In some cases this information was not communicated in good time and it caused delays in accessing information. In case of change of IP the library should inform the publisher of the new IP for verification purpose. SreeKumar and Sunitha (2009) concur that IP verification limits access to within the institutions.

The study revealed that some members who had branches experienced problems sharing resources. Poor infrastructure was a common problem among such members. Many had Internet issues, slow speed, lack of skills and many others. Although IP listing allows sharing among branches, there were members who were ignorant of this. They did not know that once the main branch was registered all the other branches were eligible for

access to the same resources. This lack of information denied access to such branches. The major problem of IP listing when it came to sharing of resources among branches was that it required networking which lacked in many cases.

5.2.6 Proposed Solutions to Improve Availability of E-resources

This section presents the findings for objective five. The findings were as follows:

Promotion of KLISC

Majority of members suggested that it was important for the KLISC management to engage in the promotion of the services offered to all libraries in Kenya since it is a national consortium. This will result in increased membership which would in turn reduce the cost of subscription or increase resources to accommodate all members' needs.

Improve Infrastructure

The issue of infrastructure was urgent since some members lack the basics like enough computers, skills, and other facilities. Members recommended that KLISC should come up with a programme to support those members who have problems of developing infrastructure.

Fair Treatment

Respondents view was that all members should be allowed to access all the resources availed through KLISC without discrimination especially research institutions and public libraries.

Secretariat for KLISC

Some members expressed the need for independent secretariat body be established to run KLISC as opposed to the present situation where KLISC is run from University of

Nairobi. They felt that money paid to the University of Nairobi would go a long way in running of an independent body.

KLISC Accounts

It was proposed that KLISC accounts be separated from that of University of Nairobi as it were the situation at the time of this study.

Effective Communication Of Needs

The management suggested that members should communicate their specific needs to the management to facilitate selection of pertinent resources for various groups.

Discussions

Library consortial building is increasingly being adopted in all types of libraries as a better alternative in the provision of electronic information and services. The study showed that KLISC like other consortia played an important role in the provision of electronic information and services among member libraries. These roles were established as collective acquisition of electronic sources, negotiation of prices, licensing, selection of resources, planning and implementation of IT infrastrucure and centralised coordination of the consortium activities. These findings are supported by (Burke 2010; IFLA 2009; Shibanda 2006; and sreekumar &Sunitha 2005). This findings point toward the importance of a consortia to act as the central coordinating body to offer assistance in areas which individual librarians are no expert for example price negotiations and licensing which are quite technical.

The purpose of provision of information in libraries is to meet the needs of users in these libraries. The needs for electronic resources are numerous and the study revealed that these resources are important for the provision of scientific information especially

journals and journal articles which are very important for research work and course work. Other needs include provision of bibliographic information, ease of use, easy distribution of information, saves on storage space and also due to user demands. (Kaul 2001 and sreekumar &Sunitha 2005). From these findings it can be concluded that provision of electronic resources is very important to libraries and should be encouraged. Study could be conducted to establish the possibility of support from the government in the provision of these resources.

There numerous benefits of consortia to member libraries. The study showed that KLISC assisted it members in many ways. There was an increase of the resources available to members, the cost of access was greatly reduced, free training offered, networking of members was made possible, and resource sharing as supported by (Dhawan 1999; Hirshon 1998; Khalid 1997; Landesman &Reenen 2009; Lowrey 1990; Pilling 2000; Pinkerton 1984; Thomas 2004; and Were 2010). From these findings it is clear that these benefits are indisputable and the consortium should be supported in every way possible to ensure its continuity.

Despite the affirmation about consortial services for the provision of electronic services, there are problems encountered which needs to be surmounted for these services to be effective. The study point out that the major problems faced by members included use of IP for authentication which restricted use within the institutions, password requirement by publishers, slow communication between publishers and members during registration, embargo period of between six months and a year, and poor ICT infrastructure among

members libraries. (Sreekumar &Sunitha, 2005). In view of these challenges there is need for intervention to minimize these challenges to ensure effective and efficient provision of electronic resources and services in libraries in Kenya.

In connection to the above problems members made the following suggestions. The consortium should intervene to improve communication between the publishers and libraries more effective, effective promotion of KLISC to all libraries in Kenya, provide help in the improvement of ICT infrastructure in member libraries and separation of KLISC secretariat and accounts from that of University Of Nairobi. The issue of KLISC's secretariat was outside the scope of this study and it is recommended that a study be carried out on KLISC Management. The other recommendations can also be looked into for if implemented can improve the services.

5.3 Conclusions

Consortia building offer solutions to the problems facing provision of scientific information for research and study. The formation of consortia has made it possible for many libraries to have access to electronic information at a very low cost. The availability of electronic resources ensures that members get: access to bibliographic information for easy location and retrieval of needed publications; easy access to information; to save on storage space; ease of use of information; easy distribution of information; access to a variety of information resources; and low maintenance cost. A consortium offers other services which are of benefit to members. They sponsor provision of ICT skills for librarians and indirectly to end users who should be trained for

maximum utilization of the electronic resources. To ensure development in all sectors of the economy, consortia building will offer a solution of meeting user needs since no library no matter how rich can be able to provide wholly for the needs of its patrons. Cooperation and resource sharing is the way to go for libraries in Kenya and world over if libraries are to achieve their main objective of providing the most relevant, up-to-date and timely information for research, study and decision making.

5.4 Recommendations

The following are the recommendations which if implemented can improve provision of electronic resources to libraries in Kenya. They are in three categories: recommendations to KLISC; recommendations to consortium member libraries; and recommendations for further research.

5.4.1 Recommendations to KLISC

From the findings of the study, it emerged that there are some areas which KLISC needs to consider to improve the provision of electronic resources to members. The recommendations are as follows:

i) Members of KLISC are drawn from various types of libraries with different backgrounds. This means that their capabilities also differ. Some of the members are not financially capable to meet all the requirements for joining KLISC. One such requirement is that of development of ICT infrastructure as a prerequisite for access to electronic resources. For this reason, this study recommends that KLISC should try to solicit sponsorship through the

partners to help improve ICT infrastructure among such members who are unable to do so themselves due to financial constraints. This will help to bridge the information divide among libraries in Kenya.

ii) It was established through the study that KLISC engages in various activities which are all geared towards provision of journals and other electronic information and services. However, there are other areas of resource sharing which KLISC can incorporate to enhance provision of information among members. This study, therefore recommends that KLISC should diversify its activities to include other services like interlending and document delivery. This is because even with the tremendous increase in publication of electronic resources, paper based information material still form an important source of information (Brandreth and Mackeigan, 1994; Friend, F. J. 1994).

iii) The electronic environment provided through the consortium can also be extended to other services based on electronic database systems as opposed to simply negotiations and pricing of resources. These services may include sharing of bibliographic information, and development of union catalogues among participating libraries.

iv) Issues of some categories of member libraries with very specific needs (e.g. research institutions) to be looked into to ensure that those specific needs of members are met as opposed to generalizing everything which is a disadvantage to such members. In other words, if possible, members should be allowed to select specific resources which are pertinent to their needs. The

KLISC management should then ensure Some of these specific resources are included if not all.

v) Efforts should be made to facilitate all members to access all the databases available to KLISC. Findings show that some publishers denied access to some of their databases available to the consortium to research institutions and KNLS.

vi) The management should market and promote KLISC to all libraries in Kenya to increase membership and subsequently reduce cost for members or increase resources where by the additional money can be used to purchase more needed resources. Marketing will also create awareness of those who do not know about KLISC so that they, too, can benefit from the resources and services offered through the consortium.

vii) The KLISC management should assist new members who would wish to join the consortium, especially those from non university organizations by talking to the administration about the consortium. This is because new members and those who aspire to join KLISC often find it hard to convince the administration of their institutions and other sponsors to commit to paying the annual subscription fee.

viii) The training provided should be geared towards benefiting majority of members especially those involved in the provision of the electronic products and services. In this connection surveys should be conducted from time to time to establish the effectiveness of the trainings and adjustments to be done accordingly.

ix) It should be established what the constitution of the consortium (if it is there) says about the frequency of elections for office bearers. Members expressed the need for election of new office bearers.

5.4.2 Recommendations to Consortium Member Libraries

i) The member libraries should take advantage of the electronic environment provided for provision of e-resources to introduce other related services like document delivery services.

ii) Member libraries should always articulate their specific needs to KLISC for them to be considered for inclusion.

iii) The management of the specific member libraries should ensure that training facilitated through KLISC benefits all the staff and end users and not just those who get the chance to attend the training.

5.4.3 Recommendations for Further Research

It is recommended that further research should be carried out in the under mentioned areas to improve provision of electronic resources to libraries in Kenya.

i) This study only looked into the provision of electronic information. An investigation should be done to look into the possibility of improving effectiveness of cooperation and resource sharing among the member libraries.

ii) A study should be carried out to investigate the effectiveness of the KLISC management in supporting access to e-resources in Kenya.

iii) A study should be conducted to establish the factors affecting the utilization and usability of e-resources provided by KLISC to member libraries' end users,

REFERENCES

Ashoor, M. S. (2000). Planning the electronic library: Suggested guidelines for the Arabian Gulf region. *The electronic library.*18 (1), 29-39.

Ayre, L. B. (2006). Resource Sharing & Library Delivery Services. A report prepared for New York Metropolitan Library Council.

Batubo, F.B. 1988. Library co-operation. *International library review*. 20:517-532.

Burke, R. (2010). Library consortia and Future of Academic Libraries. Retrieved from www.neal-schuman.com/**academic**/Burke2010.pdf.

Coto, L. and Gil, M. (2000). *Base document for the agricultural information and documentation system.* Paper presented at Latin America and the Caribbean Library Consortium Workshop. Retrieved from http://www.sidalc.net/ accessed in 2011.

Creswell, J. W. (2009). Research Design: quantitative, qualitative and mixed methods Approaches. Lincoln: University of Nebraska.

Dhawan, S.M. (1999). 'Towards an Effective Solution for Resource Sharing', in Sardana,J.L.(Ed.) Libraries and Information Services in the Electronic Information Era, *Indian Library Association*. P 214-219

http://www.businessdictionary.com/definition/litigation.html#ixzz0yeDte77M (visited on 5/9/2010).

http://www.en.wikipedia.org (visited on 5/9/2010).

http://www.answers.com/topic/monographs (visited on 24/8/2010).

Edwards, H. M. (2005). "*GAELIC: Consortial strategies for surival."* Paper presented at the Nineteenth IATUL Conference, June 1–5, 1998, Pretoria, South Africa. Retrieved from http://www.iatul.org/conference/proceedings/vol08/papers/edwards.html accessed on November 12, 2005).

Elkington, N.E. and Massie, D. (2000). "The changing nature of international resource sharing: risks and benefits of collaboration", *Library Consortium Management*, Vol. 2 No.5/6, pp.95-103.

Fordyce, M. (2004). New Zealand University Library Acquisitions consortium for the supply of print monograph resources. University of Otago library, Annual report. Retrieved from www.library.otago.ac.nz/pdf/annualreport_2004.pdf.)

Giordano, T. (2002). Library co-operation on ICT in Italy: an overview. *Program*, 36(3): 144-151.

Gorman, G. and Cullen, R (2000), "Models and opportunities for library cooperation in the Asian region", *Library Management*, Vol. 21. (7), pp.373-84.

http://eprints.ru.ac.za/428/1/Thomas_Academic_Library.pdf (visited on 26/08/2010).

Hayes, R. (2003). Cooperative game theoretical models for decision-making in contexts of library cooperation. *Library Trends 51*(3), 441-461.

Heath, F. (1989). Library cooperative activity: common characteristics of successful efforts, in Operations handbook for the small academic library, edited by G.B. McCabe. New York: Greenwood Press: 29-48.

Hirshon, A. (1998). Academic Library Consortia: Past, Present and Future. Retrieved from http://leigh.edu/{arth5/arh5.html,

Hirshon, A. (1999). Libraries, consortia and management. *Academic librarianship*, 25(2): 124-126.

Hormia-Poutanen, K., Xenidou-Dervou, C., Kupryte, R., Stange, K., Kuznetsov, K. and Woodward, H. (2006). Consortia in Europe: describing the various solutions through four country examples. retrieved from (https://www.ideals.illinois.edu/handle/2142/3619).

Kaplan, L. 1973. Library co-operation in the United States. *International library review*. 5(2):139-145.

Kaul S. (2001).Information resource sharing models in developing countries: A network emerging from The World Bank supported environmental management capacity building project. *INSPEL*, 35.pp.9-26. Available at http://forge.fh-potsdam.de/~IFLA/INSPEL/01-1kasu.pdf. last accessed 2013.

Kaul, H. K. (1999). *Library resource sharing and networks*. New Delhi: Virgo publications.

Khalid, H.M (1997), "*Cooperation and networking in university libraries*", (PhD thesis) Manchester Metropolitan University, Manchester. www.medianet.kent.edu/techreports/TR2006-02-02-UGC-DLC-K.pdf.

Kombo, D.S. and Tromp, D. L. A. (2006). *Proposal and thesis writing: an introduction*. Nairobi: Paulines Publications Africa.

Kopp, J. (1998). Library consortia and information technology: the past, the present and the promise, *Information Technology and Libraries*, 17(1): 7-12.

Kothari, C. R. (2004). *Research methodology: methods and techniques*. New Delhi: New Age International (P) Limited, publishers.

Kraus, S. (1997). Negotiation and cooperation in multi-agent environments. *Artificial Intelligence 94*, 79-97.

Lahiri, A. (1992). Time for a coordinating mechanism. *NISSAT Newsletter* 11(3): l pp.1

Landesman, M. & Van Reenen, J. (2000). Consortia vs reform: creating congruence. Journal of electronic publishing , 6(2), December:1-14. Online. Last accessed: 2011. Available: http://www.press.umich.edu/jep/06-02/landesman.html.

Lindenfeld, J.F. (1984). Six patterns of community college/public library cooperation. Community & junior college libraries , 2(4), Summer:33-41.

Lowry, C.B. (1990). Resource sharing or cost shifting: the unequal burden of cooperativecataloging and ILL in networks. College & research libraries, 51(1), January: 11-19.

Markuson, B.E. (1979). Cooperation and library network development, in New horizons for academic libraries: papers presented at the first National Conference of the Association of College and Research Libraries .., edited by R.D. Stueart and R.D.Johnson. New York: Saur:30-42.

Marty, A. K. (2002). Management issues in library networking: focus on a pilot library networking project in Ghana. *Library management*, vol. 23, No. 4/5, pp. 239-252.

McClean, N. (1999). The evolution of information resource sharing infrastructure: an Australian perspectives, *Library High Tech*, 17(3): 256-264.

Mugenda and Mugenda (1999). Research methods. Kenya: Acts press.

Nfila , R.B and Darko-Amphen. (2002). The development in academic library consortia from the 1960's through to 2000: a review of literature, *Library Management*, 23(4): 203- 212.

Odini, C. (1993). "Setting up an industrial information service", Library Review, Vol. 42 No. 1, pp. 32-9.

Parker, J.S. (1976). Regional co-operation in library services: an opportunity for developing countries. *IFLA journal*, 2(1):1-33

Pilling, S. (2000). "Collection development preservation and retention". *Interlending and Document Supply*, Vol. 28(1), pp.38-9.

Pinkerton, M.J. (1984). The ongoing challenge: doing more with less. *Show-me libraries* 36, October-November: 44-49.

Rao, Siriginidi S. (2001).Networking of libraries and information centers: challenges in India. *Library High Tech*, 19(2).

Reynolds, M.M. (1974). Library cooperation: the ideal and the reality. *College & research Libraries*, 35(6), November :424-431.

Rowley, J. and Slack, F. (1999). "New Approaches in Library Networking: Reflections in South Africa", *Journal of Librarianship and Information Science* 31), pp. 33–38.

Shibanda, G.G. (Sept 2006). E*nhancing E-journal use in Kenyan Universities*. A paper for presentation at the CODESSRIA conference on Electronic Publishing and Dissemination, Leiden, the Netherlands.

Simpson, D.B. (1990). Library consortia and access to information: costs and cost justification. *Journal of library administration*, 12(3):83-97

Sreekumar, M.G. (2002). User issues in the electronic information environment, L 1-11. In *Proceedings of the Workshop on Digital Libraries*, USEFI/DRTC/University of Mysore.

Sreekumar, M.G. and Sunitha T. (2005). Library capacity building through e – journal consortia: the indian scenario**.** MANLIBNET. Accessed from www.dspace.IIMIC.ac.in/bitstream/2259/249/1/. Accessed in 2011

Thomas, G. (2004). "South African Academic Library Consortia: Creating Value Together." Paper presented at the ICOLC 2004 Conference: 6th European meeting, October 28–30. Retrieved from http://www.gaelic.ac.za/docs/icolc_presentation_thomas.pdf (accessed in 2011).

Thomas, G. and Flourie, I. (2006). Academic library consortia in South Africa: where we come from and where we are heading. Retrieved from http://eprints.ru.ac.za/428/1/Thomas_academic_Library.pdf (accessed in 2011).

Wade, R. (1999). The very model of a modern library consortium, *Library consortium management: An international journal* 1(1): 5-18.

Were, J. (2010). African University Libraries in partnership to support academic and research activities: The Kenyan situation. Retrieved from http://www.google.co.ke/#hl=en&tbo=d&output=search&sclient=psy-ab&q=Were%2C+J.+(2010).+&oq=Were%2C+J.+(2010).+&gs_l=hp.12...6202.6202.0.8497.1.1.0.0.0.0.0.0..0.0.les%3B..0.0...1c..3.psy-

Welman, J. C. and Kruger, S. J. (2001). Research methodology. South Africa: Oxford University Press.

Wikipedia (2007). Library Consortia in the world. Retrieved from http://np.wikipedia.org.

Woodsworth, A. 1991. Library cooperation and networks: a basic reader. New York: Neal-Schuman.

APPENDICES

APPENDIX I: INTERVIEW SCHEDULE FOR LIBRARIANS

SECTION A

BIO INFORMATION

1. Name of the library _____
2. Institution _____
3. Designation _____
4. Experience (yrs) _____
5. Status of the library: Main ☐ Branch ☐

SECTION B

GENERAL INFORMATION

6. How many users are served by the library? _____
7. For how long have your library been a member of KLISC? _____
8. How much did you pay for registration (in Kshs) ? _____
9. How much do you pay per year for subscription for access to the electronic journals (in Kshs)? _____
10. Are there any other payments for the services received from KLISC?

    Yes ☐ No ☐

    If yes, what are they? _____?

    What services is the money above paid for?_____
11. Do you think the money paid to KLISC is money well spent?

    Yes ☐ No ☐

Explain your answer above

_____

_____

_____

12. How many electronic journals are available to you through KLISC?_____

13. How many journals did you subscribe to before joining KLISC? -

_____

14. Is the number above all you required at that time? Yes ☐ No ☐

If no, state why you could not have more

_____

_____

15. How much did the library spend on the subscription to journals before you joined KLISC (in Kshs)? _____

16. Why do you need e-resources for your library?

_____

_____

_____

_____

_____

Are there other services offered through KLISC that you could not offer before?

Yes ☐ No ☐

If yes, what are they?

_____

_____

_____

17. What kind of information support does your library expect from KLISC?

_____

_____

_____

_____

_____

_____

18. What problems does the library experience in accessing these electronic resources?

_____

_____

_____

_____

_____

_____

SECTION C

ACCESS OF INFORMATION

19. Are all your users allowed to access the e-journals?

Yes ☐ No ☐

20. If no, explain

_____

_____

_____

21. What conditions should users meet before they can access the e-journals?

_____

_____

_____

22. Does your library have other branches?

Yes ☐ No ☐

23. If yes, how do users in these branches access the e-journals?

_____

_____

_____

Yes ☐ No ☐

If no, please explain the reason

SECTION D

EVALUATION

25 In your opinion is being a member of KLISC beneficial to your library?

Yes ☐ No ☐

26 If yes, please list the benefits of being a member of KLISC

_____

_____

If no, please state why

_____

_____

_____

_____

27 Are you happy with the way KLISC is being run?

Yes ☐ No ☐

Please state why you think so

_____

_____

_____

_____

28 In your opinion, what should be done to make KLISC serve its members better?

_____

_____

_____

_____

THE END

APPENDIX II: INTERVIEW SCHEDULE FOR THE KLISC MANAGEMENT

1. Institution _____
2. Position held _____
3. How long have you been a member of the management team?

   _____

4. What is KLISC and how does it carry out its activities?

   _____

   _____

   _____

   _____

   _____

   _____

5. How many members does KLISC currently have? _____
6. What are the requirements for being a member of KLISC?

   _____

   _____

   _____

   _____

7. What are the major services that KLISC provides to its members?

   _____

   _____

   _____

8. How many e-journals does KLISC subscribe on behalf of its members?

_____

_____

_____

9. What role does KLISC play in connection with the following?

Negotiation of prices

_____

_____

_____

_____

Licensing

_____

_____

_____

_____

Access to e-resources

_____

_____

_____

10. How does KLISC deal with the issue of Subscription payments?

_____

_____

_____

11. Does KLISC assist its members to acquire skills in managing the electronic resources?

Yes ☐ No ☐

If yes explain how this is done

_____

_____

_____

_____

If no, please state why

_____

_____

_____

_____

11. Does KLSC offer other services other than e-journals?

Yes ☐ No ☐

If yes, what are they?

_____

_____

_____

_____

12. What challenges does KLISC face in the provision of services to its members?

_____

_____

_____

_____

_____

13. Does KLISC assist its members in developing ICT infrastructure in their libraries?

Yes ☐ No

If yes, explain how ☐

_____

_____

_____

_____

If no, please state why

_____

_____

_____

_____

14. Does KLISC market itself to the non-members?

Yes ☐ No ☐

If yes, which methods are used in doing so?

_____

_____

_____

_____

If no, please state why

_____

_____

_____

15. To what extent has KLISC been successful in supporting consortium libraries?

_____

_____

_____

_____

17. What should be done to improve availability of e-resources in libraries in Kenya?

_____

_____

_____

THE END

APPENDIX III: RESOURCES AVAILLABLE TO KENYA THROUGH INASP

- **Publishers**

Publishers

INASP works with publishers and aggregators to make their resources available within our partner and network countries.

Acoustical Society of America (ASA) Access to all issues of Journal of the Acoustical Society of America (JASA); Back to Vol. 1, No. 1, October 1929

African Journals Online (AJOL) Abstracts of over 420 African-published journals, with access to some full text online, and a document delivery service.

American Institute of Physics AIP publishes 12 journals, two magazines, and a conference proceedings series. Their citation platform hosts over 1.5 million articles from more than 25 scholarly publishers.

American Physical Society APS Access to the Physical Review Online Archive (PROLA) and 11 journals produced by the American Physical Society.

Annual Reviews Annual Reviews publications operate as a high quality filter, prioritizing and synthesizing the primary research literature in 37 different disciplines for the Biomedical, Life, Physical and Social Sciences.

British Library Direct Provides free table of contents searching from 5 years of data for over 20 000 journals.

British Library Document Supply Centre (BLDSC) The world's largest collection devoted to the provision of remote document delivery covering every aspect of science, technology, medicine and humanities, in many languages.

Cambridge University Press Over 230 leading titles in Linguistics, Politics, Medicine, Science, Technology, Social Science and Humanities.

Cochrane Library An internationally acclaimed database of regularly updated evidence-based medical systematic reviews.

De Gruyter LIS Books Subject based package of 45 e-books, predominantly IFLA publications .

EBSCO Host Research Databases Access to 8 major databases: Academic Search Premier; Business Source Premier; ERIC; Master file Premier; Newspaper Source; Health Source : Nursing & Academic; Health Source : Consumer Edition; Medline.

EBSCO Religion and Theology Collection 6 databases are available through institutional subscriptions.

Edinburgh University Press Over 30 full-text electronic journals in the humanities and social sciences.

Emerald Group Publishing Ltd Emerald Management, features 140 Business and Management journals and Emerald Engineering eJournal Collection, features 19 Engineering journals. All of which are peer-reviewed and fully searchable full text journals plus reviews from the world's top 300 management journals.

Gale Cengage Learning: Expanded Academic and Health & Wellness Resource Center Expanded Academic and Health & Wellness Resource Center: General research database that covers subject areas from art and literature to economics and the sciences.

Geological Society The Lyell Collection is an electronic collection of new and archival journal, Special Publication and book content, published by the Geological Society of London. It contains key peer-reviewed Earth science literature of the highest quality

Institute of Electronic and Electrical Engineers (IEEE) Access the IEEE/IET Electronic Library (IEL), which provides access to neary 2 million full-text documents in electrical engineering and computer science.

IOP Publishing Over 60 of the world's most prestigious journals in physics and related disciplines.

JSTOR Access to full-text journal articles available as searchable, scanned page images from over 800 important scholarly journals in 48 disciplines.

Mary Ann Liebert, Inc. 64 authoritative publications in the most promising areas of biotechnology, biomedical research/life sciences, clinical medicine and surgery, alternative and complementary medicine, law, philanthropy, environmental science and sustainability.

NPG - Nature Publishes 79 journals and online databases across the life, physical and applied sciences and, most recently, clinical medicine.

NPG - Palgrave Macmillan Journals Palgrave Macmillan offer a combined portfolio of over 60 peer-reviewed e-journals in the field of Business, Social Sciences and the Humanities.

OECD OECD (Organisation for Economic Co-operation and Development) is the world's largest think-tank, renowned for its authoritative, internationally comparable statistics, analysis, and outlooks in Economics, Public Policy, Social Sciences and Environmental issues.

OSA - Optical Society of America 15 Optics and photonics journals published by OSA and selected OSA meeting content.

OUP E-books Oxford English Dictionary Online The most authoritative and comprehensive dictionary of English in the world, tracing the evolution and use of more than 600,000 words through 3 million quotations.

Oxford Journals (OUP) Over 200 leading titles in science, technology, medicine, humanities and social sciences.

Project MUSE Project MUSE provides online access to over 430 full-text journals from 70 publishers in humanities and social science. MUSE pricing meets library needs around the world.

Royal College of Physicians Full text access to “Clinical Medicine”, the journal of the Royal College of Physicians, London

Royal Society Seven leading international journals from the Royal Society, the UK's national academy of science. Titles cover the whole of the biological and physical sciences, and include Philosophical Transactions of the Royal Society, the longest-running continuously published journal in the world.

Royal Society of Chemistry: RSC Journals Archive Back file containing all articles published by the RSC (and its forerunner societies) from 1841 to 2004

Royal Society of Chemistry: RSC Journals Online Online Journals Database (chemistry); plus 4 key abstracting databases plus a series of specialist online periodical reports

Sage Publications Over 550 journals in the business, humanities, social sciences and STM.

Sage Publications - IMechE (was PEP) 18 journals representing the best in mechanical engineering. Also available is the IMechE Proceedings Archive 1847-1996.

Springer eJournals Springer is one of the leading international scientific publishing companies. Springer eJournals cover a wide range of subjects including biomedicine and the life sciences, clinical medicine, physics, engineering, mathematics, computer sciences, human sciences, social sciences and economics.

Symposium Journals Symposium Journals is a pioneer in the publication of online-only academic journals, i.e. journals that have no printed editions but otherwise have the same aims, traditions, standards, and presentation as conventional journals.

Taylor & Francis eBestseller Packages The Taylor & Francis eBestseller Packages contains 1200 of their bestselling eBook titles from twelve key subject areas.

Taylor & Francis Online Journals More than 1,300 titles in humanities, social sciences and applied sciences.

University of Chicago Press The Journals Division publishes journals and serials in a wide range of disciplines, including several journals that were the first scholarly publications in their respective fields.

Wiley Online Library HSS Wiley Online Library Humanities and Social Sciences collection (HSS) provides access to over 500 journals

Wiley Online Library STM Wiley Online Library Science, Technology and Medicine collection of over 800 titles

World Bank e-library a package of electronic databases that includes: World Bank e-Library, World Development Indicators (WDI) Online and Global Development Finance (GDF) Online.

World Bank Global Development Finance (GDF) Database An electronic data source on the of external debt and financial flow data.

World Bank World Development Indicators (WDI) Online Database An electronic data source on the global economy.

World Bank – Global Economic Monitor Conceived by the World Bank team responsible for monitoring and reporting on day-to-day developments in the global economy, Global Economic Monitor is a "one-stop shop" portal for analysis of current economic trends, and economic and financial indicators.

World Bank: Africa Development Indicators Africa Development Indicators is the premier data source on the African economy. It contains over 1,400 indicators and time series from 1965 for 53 countries.

Related Links

Consortia

Kenya Library and Information Services Consortium (KLISC) http://klisc.org/

Other access Initiatives

Research4Life

Research4Life is the collective name for AGORA/HINARI/OARE. A public-private partnership of the WHO, FAO, UNEP, WIPO, Cornell and Yale Universities and the International Association of Scientific, Technical & Medical Publishers.

HINARI: http://extranet.who.int/hinari/en/country_offer.php

AGORA: http://agora.aginternetwork.org/content/en/country_offer.php

OARE: http://oare.oaresciences.org/content/en/country_offer.php

Country Contacts

INASP is represented in your country by the following people:

Agatha Kabugu,
Systems Librarian
University of Nairobi Library
PO Box 30197
Nairobi
00100
Kenya
Tel: 254 020 318262 Ext 28201
Fax: 254 020 245566
Email: akabugu@yahoo.com, akabugu@uonbi.ac.ke**Web:** http://klisc.org/index.php

APPENDIX IV: ELECTRONIC DATABASES AND JOURNALS

UNIVERSITY OF NAIROBI 2010

1. **Acoustical Society of America** (ASA)
   URL: http://asa.aip.org/
   Subject Strengths: Journal of the Acoustical Society of America (JASA) Acoustics - General Linear Acoustics, Nonlinear Acoustics, Atmospheric Acoustics and Aeroacoustics, Underwater Sound, Ultrasonics and Physical Acoustics, Transduction, Acoustical Measurements, Instrumentation, Applied Acoustics, Structural Acoustics and Vibration, Noise: Effects and Control, Architectural Acoustics, Acoustic Signal Processing, Physiological Acoustics, Psychological Acoustics, Speech Production, Speech Perception, Speech Processing, Musical Acoustics, Bioacoustics, Computational Acoustics, Mathematical Acoustics.
2. **American Institute of Physics**
   URL: http://www.aip.org/pubs/
   Subject Strengths: Applied and multidisciplinary physics.
3. **American Physical Society APS**
   URL: http://publish.aps.org/
   Subject Strengths: Physics, Atomic, molecular and optical physics, Condensed matter and materials physics, Nuclear physics, Particles, fields, gravitation, and cosmology Statistical, non-linear, and soft matter physics, Accelerators and beams, Physics education research.
   Annual Reviews
   URL: http://www.annualreviews.org/
   Subject Strengths: Annual Reviews publishes authoritative reviews in 40 focused disciplines within the Biomedical, Life, Physical, and Social Sciences.
4. **Beech Tree Publishing**
   URL: http://www.ingentaconnect.com/content/beech
   Subject Strengths: Public policy for science and technology, Research evaluation.
5. **British Psychological Society**
   URL: http://www.ingentaconnect.com/content/bpsoc
   Subject Strengths: 11 international peer-reviewed journals offer the latest original research in psychology.
6. **Cambridge University Press**
   URL: http://journals.cambridge.org
   Subject Strengths: Politics, Linguistics, Social Science, Humanities, Law, Mathematics, Science, Medicine.
7. **EBSCO Host Research Databases**
   URL: http://search.epnet.com

Subject Strengths: Good coverage of most branches of social sciences and humanities, strong business coverage, strong nursing, medicine and allied health coverage, dedicated newspaper database.

8. **EBSCO Religion and Theology Collection**
   URL: http://search.epnet.com
   Subject Strengths: Religion and human culture, Theology, philosophy and ethics, Christian denominations, Church history, missions and ecumenism, World religions and religious studies, Bible archaeology and antiquities, Pastoral ministry.
9. **EMERALD**
   URL: http://www.emeraldinsight.com
   Subject Strengths: Emerald Management, features 140 Business and Management journals and Emerald Engineering eJournal Collection, features 19 Engineering journals. Computer Science, Engineering, Library and Information Sciences, Marketing, Management. Ensure you have the list of journals subscribed to.
10. **GALE**
    URL; http://infotrac.london.galegroup.com
    Username: nairobi
    Password: database
    Subject Strengths
    Expanded Academic ASAP Database: Economics, topics in business and finance, anthropology, archeology, computing and computers, education, art, literature, music, history
    international relations, law, sociology, philosophy, religion.
    Health and Wellness Resource Centre: various topics in medicine and health, STDs and AIDS, psychology and mental health, nursing, includes the BMJ and JAMA.
11. **Geological Society**
    URL: http://www.lyellcollection.org/
    Subject Strengths: Geology, Earth Sciences
12. **Institute of Electronic and Electrical Engineers (IEEE**)
    URL: http://ieeexplore.ieee.org/
    Subject Strengths: Electrical Engineering, Telecommunications, Computer Science & Architecture, Imaging Science & Photographic Technology, Robotics, Biomedical Engineering
    Computer Science Information Systems, Software Engineering, Remote Sensing, Artificial Intelligence.
13. **Institute of Physics Publishing (IOP)**
    URL: http://journals.iop.org/
    Subject Strengths: IOP publishes over 50 of the world's most prestigious journals in the following areas; Applied physics, Computer science, Condensed matter and materials science

High energy and nuclear physics, Mathematics, applied mathematics and mathematical physics, Measurement science and sensors, Medical and biological sciences, Optical, atomic and molecular physics, Physics education, Plasma physics.

14. **JSTOR**
    URL: http://www.jstor.org
    Subject Strengths: This is an archive that contains over 800 important scholarly journals in 50 disciplines that include – Economics, History, Political Science, Language & Literature, Art & Art History, Music, Mathematics & Statistics, Education.
15. **Mary Ann Liebert**
    URL: http://www.liebertonline.com/
    Subject Strengths: Biotechnology, Biomedical research/life sciences, Clinical medicine and surgery, Law.
16. **Nature**
    URL: http://www.nature.com/
    Subject Strengths: Nature Publishing Group (NPG) publishes journals and online databases across the life, physical and applied sciences and, most recently, clinical medicine. The specific subject areas include; Chemistry, Drug discovery, Biotechnology, Materials, Methods & Protocols; Cancer, Cardiovascular medicine, Dentistry, Endocrinology, Gastroenterology & Hepatology, Methods & Protocols, Pathology & Pathobiology, Urology; Earth sciences
    Evolution & Ecology, Geosciences; Biotechnology, Cancer, Development, Drug discovery,
    Evolution & Ecology, Genetics, Immunology, Medical research, Methods & Protocols,
    Microbiology, Molecular cell biology, Neuroscience, Pharmacology, Systems biology; Physics,
    Materials, Nanotechnology, Photonics.
17. **Organisation for Economic Co-operation and Development (OECD)**
    URL: http://www.sourceoecd.org/
    Subject Strengths: Economics, Energy, Environment, Social sciences.
18. **Optical Society of America (OSA)**
    URL; http://www.opticsinfobase.org/
    Subject Strengths: 15 Optics and photonics journals published by OSA, conference papers, and selected OSA meeting content, including Advances in Optics and Photonics.

19. **OUP – Oxford English Dictionary**
    URL: http://www.oed.com
    Subject Strengths: The OED covers words from across the English-speaking world, from North America to South Africa, from Australia and New Zealand to the

Caribbean. It also offers the best in etymological analysis and in listing of variant spellings, and it shows pronunciation using the International Phonetic Alphabet.

20. **Oxford Journals**
    URL: http://www.oxfordjournals.org
    Subject Strengths: Biological Sciences, Medicine, Public Health and Epidemiology, Humanities
    Social Sciences, Law, Economics, Business, and Finance, Mathematics, Statistics, Computing and Physics.
21. **Project Muse**
    URL: http://muse.jhu.edu/journals/
    Subject Strengths: Project MUSE provides online access to 430 full-text journals from 108 publishers in humanities and social science – specific subject areas include, African American and African Diaspora Studies, African Studies, American Studies, Anthropology, Art and Architecture, Asian Studies, Book History and Print Culture, Caribbean Studies, Classics
    Cultural Studies, Economics, Education, Film, Theater, and Performing Arts, Folklore
    French Studies, German Studies, History, History of Science, Technology, and Medicine
    International Relations, Judaic Studies, Language and Linguistics, Latin American Studies
    Library Science and Publishing, Literary Magazines, Literature, Medieval and Renaissance Studies, Middle East Studies, Music, Native American and Indigenous Studies, Pacific Studies
    Philosophy, Politics and Policy Studies, Population Studies, Religion, Sociology, Women's Studies.
22. **Royal College of Physicians**
    URL: http://www.ingentaconnect.com/content/rcop/cm
    Subject Strengths: The journal features articles covering original research, current issues, ethics, law, clinical governance and audit, and also reports on prestigious College lectures and conferences. It covers clinical medicine, public health.
23. **Royal Society**
    URL: http://royalsocietypublishing.org/journals
    Subject Strengths: Mathematics, engineering and other physical sciences, All biological sciences; particularly good on ecology, environment, multidisciplinary and interdisciplinary science.
24. **Royal Society of Chemistry Archives**
    URL: http://www.rsc.org/Publishing/Journals/DigitalArchive/available.asp
    Subject Strengths: As this is an archive, all articles are over one year old and include all branches of chemistry including traditional fields (organic, inorganic, analytical chemistry) plus newer developments and cross-disciplinary studies such as natural

products and green chemistry, databases in analytical chemistry, catalysts and catalysed reactions, organic synthesis and natural products, specialist reports in: amino acids, peptides and proteins, carbohydrate chemistry. monosaccharides, disaccharides and specific oligosaccharides, catalysis chemical modelling, electron paramagnetic resonance, NMR, organometallic chemistry, organophosphorus chemistry, photochemistry, spectroscopic Properties of inorganic and organometallic compounds.

25. **Royal Society of Chemistry Journals Online**
    URL: http://www.rsc.org/Publishing/index.asp
    Subject Strengths: 37 full text journals spanning all branches of chemistry, plus a range of key databases in analytical chemistry, catalysts and catalysed reactions, organic synthesis and natural products.
26. **SAGE**
    URL: http://online.sagepub.com/
    Subject Strengths: SAGE publishes more than 560 journals in Business, Humanities, Social Sciences, Science, Technology and Medicine.
27. **Springer**
    URL: http://www.springerlink.com
    Subject Strengths: A package of 200 journals have been subscribed to in 2010. Ensure you have the list. Subject areas include Engineering, Humanities, Social Sciences and Law, Mathematics and Statistics, Medicine, Physics and Astronomy.
28. **Symposium Journals**
    URL: http://www.symposium-journals.co.uk/
    Subject Strengths: Education, Learning.
29. **University of California Press**
    URL: http://caliber.ucpress.net
    Subject Strengths: Access to 8 journals in the following fields; Area Studies, History of Science
    Human research and BioEthics, Sociology, Social interaction.
30. **University of Chicago Press**
    URL: http://www.journals.uchicago.edu/
    Subject Strengths: Economics, Education, Humanities, Law, Life Sciences, Medical Sciences
    Social Sciences.

31. **Wiley Blackwell Intersciece Collection**
    URL: http://www3.interscience.wiley.com
    Subject Strengths: Business, Chemistry & Physics, Computer Science, Engineering Humanities & Social sciences, Life, Earth and Environmental Sciences, Mathematics & Statistics, Medicine & Nursing, Physics and Astronomy, Polymers and Materials Science. Get the list of subscribed journals for 2010.

32. World Bank

URL: http://www.worldbank.org/elibrary

Subject Strengths: World Bank elibrary includes Agriculture, Communities & Human Settlements, Conflict and Development, Education, Energy, Environment, Finance and Financial Sector Development, Gender, Governance, Health, Nutrition and Population

Industry; Information and Communication Technologies, Infrastructure Economics and Finance

International Economics & Trade, Law and Development, Macroeconomics and Economic Growth, Poverty Reduction, Private Sector Development, Public Sector Development

Rural Development, Science and Technology Development, Social Development Social Protections and Labor, Transport; Urban Development, Water Resources Water Supply and Sanitation.

OTHER FREE COMPLIMENTARY PROGRAMS

33. AGORA

URL: http://www.aginternetwork.org/en/

Username: ag-ken059

Password: churdarderdu

Subject Areas: Access to Global Online Research in Agriculture (AGORA) is a program to provide free or low cost access to major scientific journals in Agriculture, Animal Science, Biology, Biotechnology/Applied Microbiology, Chemistry/Biochemistry/Biophysics, Economics/Social Science, Entomology/Pest Control, Environment/Ecology/Natural Resources, Fisheries/Aquatic Science, Food Science/Nutrition, Forestry, Plant Science/Soil Science.

34. HINARI

URL: http://www.who.int/hinari/en/

Username: KEN006

Password: 16NE232

Subject Areas: The Access to Research Initiative (HINARI) provides free or very low cost online access to the major journals in biomedical and related social sciences.

35. OARE

URL: http://www.oaresciences.org/en/

Username: KEN558

Password: 25146

Subject Areas: Online Access to Research in the Environment (OARE) program enables institutions in developing countries to access journals in the following fields; Biology; Biotechnology, Genetics & Genetically Modified Species; Botany & Plant Biodiversity; Climatology, Climate Change & Meteorology; Ecology & Wildlife Conservation; Energy Conservation & Renewable Energy; Environmental Chemistry; Environmental & Natural Resource Economics; Environmental Engineering;

Environmental Law, Policy & Planning; Fish & Fisheries; Forests & Forestry; Geography, Population Studies & Migration; Geology & Earth Sciences; Natural Environmental Disasters; Oceanography & Marine Biology; Pollution & Environmental Toxicology; Satellite & Remote Sensing Technologies; Soil Sciences and Desertification; Waste Management; Water, Hydrology & Wetlands; Zoology & Animal Biodiversity.

36. DIRECTORY OF OPEN ACCESS JOURNALS (DOAJ)

URL: http://www.doaj.org/

Subject Strengths: The service offers free, full text, quality controlled scientific and scholarly journals in all disciplines. Currently the service has 4764 journals.

37. AFRICAN JOURNALS ONLINE (AJOL)

URL: http://www.ajol.info/

Subject Strengths: The service provides tables of contents and abstracts of over 250 African journals covering all disciplines with document delivery. Articles from journals published in own country will however not be provided.

UNLESS WHERE SPECIFIED, ALL DATABASES/RESOURCES ARE ACCESSIBLE THROUGH IP AUTHENTICATION

APPENDIX V: RESEARCH PERMIT LETTER

MOI UNIVERSITY
SCHOOL OF INFORMATION SCIENCES
NAIROBI CAMPUS

Telephone: (020)-2211206
Fax: (020) 220247
Telex. MOIVARSITY 35047
Email: sisnairobi@mu.ac.ke

P.O. Box 63056-00200
NAIROBI
KENYA

Our Ref: IS/NBI/MPHIL/02/09

30th November, 2010

The Executive Secretary,
National Council for Science and Technology,
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH PERMIT FOR TABITHA MWANZIA – REG.NO. IS/MPHIL/02/09
MPHIL CANDIDATE MOI UNIVERSITY

The above named is an MPhil. candidate in the School of Information Sciences, Moi University undertaking thesis research on the following topic:

"The Role of Kenya Library and Information Services Consortium (KLISC) in Provision of Electronic Information Resources in Libraries in Kenya".

Any assistance accorded to Tabitha to enable her progress with her work will be highly appreciated.

Yours sincerely,

SCHOOL OF INFORMATION SCIENCES
MOI UNIVERSITY, NAIROBI CAMPUS
P.O. Box 63056 - 00200 NAIROBI

EVANS MUNGE
SCHOOL OF INFORMATION SCIENCES
NAIROBI PROGRAMME COORDINATOR

EM/

APPENDIX VII: RESEARCH AUTHORIZATION

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Our Ref: **NCST/RRI/12/1/INF/395** Date: **17th December, 2010**

Tabitha Muli Mwanzia
Moi University
P. O. Box 63056- 00200
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"The role of the Kenya Library and Information Services Consortium (KLISC) in the provision of electronic information resources in Libraries in Kenya"***. I am pleased to inform you that you have been authorized to undertake research in **all Libraries in Kenya** for a period ending ***31st May, 2011.***

You are advised to report to **the Director, Kenya Library Services** before embarking on the research project.

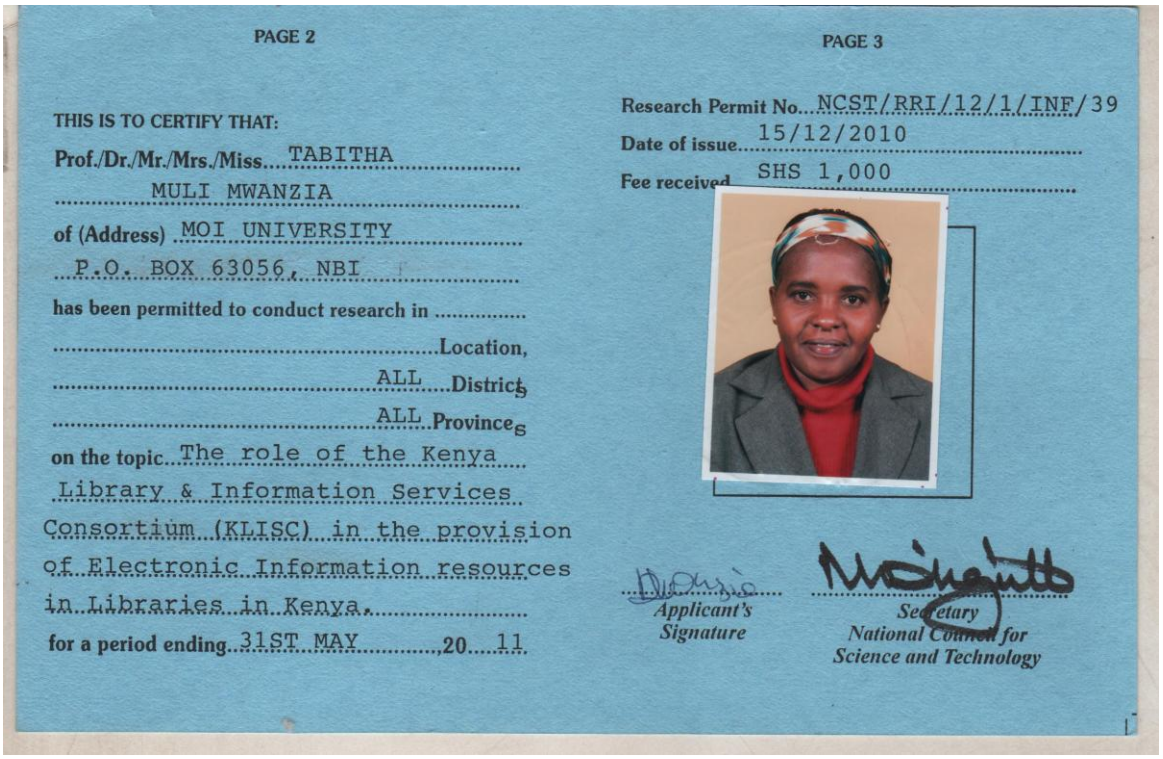
On completion of the research, you are expected to submit **one hard copy and one soft copy** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC
FOR: SECRETARY/CEO

Copy to:

The Director
Kenya Library Services
NAIROBI

APPENDIX VII: RESEARCH PERMIT



PAGE 2

THIS IS TO CERTIFY THAT:

Prof./Dr./Mr./Mrs./Miss. TABITHA MULI MWANZIA

of (Address) MOI UNIVERSITY P.O. BOX 63056, NBI

has been permitted to conduct research in .....Location,

.....ALL.....Districts

.....ALL.....Provinces

on the topic The role of the Kenya Library & Information Services Consortium (KLISC) in the provision of Electronic Information resources in Libraries in Kenya.

for a period ending 31ST MAY ,20 11

PAGE 3

Research Permit No. NCST/RRI/12/1/INF/39

Date of issue 15/12/2010

Fee received SHS 1,000

Applicant's Signature

Secretary
National Council for
Science and Technology