

**ACCESSIBILITY AND USE OF ONLINE DATABASES: A CASE STUDY OF  
INASP/PERI INITIATIVE IN KENYAN UNIVERSITY LIBRARIES**

By

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## DECLARATION

I do hereby declare that this research project is my original work and has not been submitted in part or other form for a degree in any other university.



15/10/2007

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E55/12556/04

### Approval

This project report has been submitted for examination with my approval as a University Supervisor.



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To all the respondents, thank you for making this study a success.

## **DEDICATION**

This work is dedicated to my maternal grandmother, Monicah O. Mukolwe who, though illiterate, invested in my secondary and undergraduate education. She will always remain a strong pillar and source of inspiration in my life.

## ACRONYMS AND ABBREVIATIONS

AICAD	Africa Institute for Capacity Development
ALA	American Library Association
ANU	Africa Nazarene University
CHE	Commission for Higher Education
CUEA	Catholic University of Eastern Africa
GDP	Gross Domestic Product
HDI	Human Development Index
ICT	Information Communication Technology
INASP	International Network for the Availability of Scientific Publications
IP	Internet Protocol
ISP	Internet Service Provider
KLISC	Kenya Library and Information Services Consortium
KU	Kenyatta University
LAN	Local Area Network
PDA	Personal Digital Assistant
PERI	Programme for the Enhancement of Research Information
RUSA	Reference and User Services Association (a committee of the American Library Association)
UoN	University of Nairobi
WAN	Wide Area Network

## ABSTRACT

This study assesses the impact of online databases accessed through the Programme for the Enhancement of Research Information (PERI) on teaching, learning and research in Kenyan universities. The online resources are a new innovation in these libraries and the study therefore sought to establish the current status in relation to access and use of the resources. It focused on the available access facilities, users' awareness levels and training in use, challenges hampering access and use of the resources and sustainability of the PERI initiative in Kenya.

A survey was conducted in four universities (two public and two private). It targeted university and reference librarians, lecturers and Masters students. Questionnaires were used to gather information from lecturers and Masters students, while university and reference librarians were interviewed as key informants. The general response rate for all the 136 target respondents was eighty percent (80%).

Findings point at limited use due to inadequate access facilities in the university libraries. Users' awareness of availability of the INASP/PERI online databases in their local libraries is low- only 18% of all the lecturers and Masters students were able to mention a few of these academic databases. Most who claimed to be aware associated online databases with the search engines – Google and Yahoo! The study found out that 93% of the lecturers and 72% of the Masters students used print resources as compared to 73% of lecturers and 82% Masters students who used online

resources including search engines. This is because the print resources are readily available in their libraries unlike access to online databases that is hampered due to various reasons.

The study also established that information literacy training in Kenyan universities is still uncoordinated with lecturers teaching Communication Skills (a common unit) to undergraduate students only. Librarians teach the unit's library component on request by lecturers. Both lecturers and Masters students are not empowered to access and use online information.

The study identifies various challenges that hamper access and use of the INASP/PERI online databases by the academic community in the country. The major challenges include inadequate access facilities; inability of the databases to adequately cover the information needs of most users in private institutions; insufficient bandwidth; lack of space; lack of awareness; high computer illiteracy and inadequate professional staff. Other challenges include lack of support facilities and services; lack of support from respective university administration and time limits to access and use the online databases.

The lecturers targeted in the study indicated that the provision of online resources by their university libraries has not had a big impact on their work. The implication is that the expected outcome from access and use of the PERI online resources namely quality research and publishing, effective teaching and learning are not therefore

being achieved in Kenya. The study concludes that the country's academic community is not contributing towards the production and dissemination of knowledge through use of ICTs as envisaged by INASP/PERI. There is need for all stakeholders to urgently address identified challenges to enable maximum utilization of these resources. This dissertation outlines some recommendations that are useful for addressing the issues

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND INFORMATION

Programme for the Enhancement of Research Information (PERI) is an initiative of the International Network for the Availability of Scientific Publications (INASP), an international charity organization based in the United Kingdom. The programme was started in 1999/2000 to support capacity building in the research sector in developing and transitional countries by strengthening the production, access and dissemination of information and knowledge through utilization of Information Communication Technologies (ICTs). Supported countries are selected using the Gross Domestic Product (GDP) and the Human Development Index (HDI). Besides the new independent states all over the world, most of the countries supported by this initiative are in Africa, Asia and Latin America (*INASP/PERI website*). Currently, the United Nations Development Programme (UNDP) ranks Kenya among countries with low GDP and HDI; Kenya is at position 152 out of 177 countries with an HDI of 0.491, implying that Kenya is a developing country because its life expectancy, education, literacy and standards of living are low (Wikipedia, 2004).

Priestely (2005) observes that despite the massive growth in internet connectivity and many discussions on the need to bridge the digital divides at the beginning of the 21<sup>st</sup> century, education institutions in developing and transitional countries lacked access to up to date journals, databases and other information resources; and are also challenged in their ability to communicate their research findings to local and global audiences. This is

why in 1999, INASP joined several African university libraries and researchers in a pilot project to test the logistics of providing access to up-to-date scholarly information and knowledge. The aim is to enable developing country research to be published, accessed and disseminated locally, and to provide appropriate training to librarians and researchers to achieve these ends. It is against this background that the PERI initiative was established with the objectives to:

- Facilitate the acquisition of international and local information and knowledge.
- Improve access to local research through improved preparation, production and management of local journals
- Provide awareness or training in the use, evaluation and management of electronic information and ICTs.
- Support problem-solving of regional and local information production and dissemination.

Rosenberg (1997) notes that since the mid 1980s, the relative value of local university libraries had declined to a near collapse. This decline was characterized by low numbers of monographs per student, inadequate journal subscriptions and limited access to electronic information. This situation led to these libraries' inadequacy in supporting teaching, learning and research activities in universities (Kavulya, 2006). This observation was made before the introduction of PERI.

Were (2007)<sup>1</sup>, acknowledges that the introduction of INASP/PERI programme in Kenya in the year 2000 was a welcome and appreciated move because libraries and information centers in the country had been experiencing problems with accessing research information. Most public university libraries had been unable to individually subscribe to scholarly journals due to their ever-increasing prices against a background of shrinking budgetary allocations. The programme was funded by donors from its inception in year 2000 up to year 2003 when Kenya was challenged to either meet the cost of journal subscription or drop out of the programme. This led to the formation of the Kenya Library and Information Services Consortium (KLISC). This consortium was to enable participating members to pool their financial resources and share the costs so as to continue accessing the resources. Specifically, the objectives of KLISC were to:

- Enhance dissemination of information for research
- Enhance dissemination of information for national development.
- Share information resources in stock.
- Facilitate capacity building in libraries and information centers
- Share procurement costs of information resources
- Promote the use of ICTs in information management
- Promote development of local content

KLISC is housed at the University of Nairobi and members pay a registration fee of Kshs 5,000 and an annual membership fee of Kshs. 10,000. Depending on the number

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<sup>1</sup> Were, J. (2007), *personal communication*

of membership, the cost of subscription is calculated based on the type/category of member institutions for instance, in the year 2007 subscription fees were: Kshs. 1.7 million for public universities; Kshs. 360,000 for private universities and Kshs. 200,000 for non-university institutions.

In order to facilitate effective access and use of online resources accessed through INASP/PERI, information professionals are trained through workshops, seminars and conferences. The consortium members are also encouraged to organize training activities at individual and institutional levels for their staff and researchers. INASP/PERI also provides online training manuals.

In essence therefore, access and use of electronic resources through the INASP/PERI initiative implies that Kenyan university libraries' users are benefiting from the advantages associated with ICT produced, stored and shared information including but not limited to fast and remote access to vast amounts of scholarly information.

Besides being part of the global village as a result, the local research community is expected to enhance the responsibility of their respective universities as the intellectual hubs of the country. Through research activities, they are expected to steer the country to development. Researchers in the country should be able to easily generate, package and share their research findings with other researchers in other countries through the use of the accompanying e-mail and Internet facilities. The INASP/PERI databases, as a complement to the other information resources, should

generally lead to quality teaching, learning and research activities in the country's universities.

## 1.2 STATEMENT OF THE PROBLEM

In recognition of the vital role to be played by librarians in implementing the PERI programme, INASP/PERI trains librarians locally and internationally through seminars, workshops and conferences. Online training manuals are also availed on the Internet for free. According to Priestly (2005) there are four ICT training workshops. They include:

- Introduction to using the Internet
- Electronic Journals and Electronic Resources Library Management
- Web Page Design and Authoring, leading to Library Web Page
- ICT troubleshooting for Librarians and Information Personnel

The INASP/Kenya country coordinator states that since its formation, KLISC, under the umbrella of PERI has carried out commendable activities to support research in Kenya. Such include collective acquisition of resources, ICT training of information professionals and the training of researchers to enhance their skills in information retrieval. She further acknowledges that before the introduction of the PERI initiative, libraries and other information centers in the country were experiencing problems accessing research information. She gives an example of public universities, most of which had been unable to individually subscribe to scholarly journals due to their ever-increasing prices against a background of shrinking budgetary allocations. Although donor funding was stopped in 2003, the coordinator acknowledges that

some institutions, for example, the University of Nairobi is saving up to 90% on journal subscriptions by being a member of KLISC. Despite such benefits, no study has been carried out in the country on how the PERI initiative has impacted on the provision of library information services by university libraries in support of teaching, learning and research in their parent organizations.

The ICT training of information professionals offered by INASP/PERI is aimed at enabling them apply the skills and knowledge gained to generally facilitate effective and efficient use of the online databases. Besides this training, access and use of the online databases will also depend on whether or not the librarians are carrying out the following interrelated activities: making users aware of the availability of the resources in their respective libraries; facilitating the teaching of information literacy skills; and continued marketing and promotion of the resources. An earlier study by Kavulya (2004) sought to find out the methods used by university libraries to market all their resources and services. This study tries to establish how university libraries in Kenya are marketing the online databases accessed through INASP/PERI bearing in mind that these are relatively new information resources in these libraries.

In relation to the above, INASP/PERI recognizes that the success of the PERI initiative depends on the extent of digitization of the libraries and information centers in the programme. This is why it commissioned a study by Rosenberg (2006), which aimed at establishing the state of digitization in university libraries in Sub-Saharan Anglophone Africa. Although Kenya was included in the above study, there is a

general lack of published information, specifically on the impact of or the challenges faced by implementing the PERI programme in the country. One such local challenge can be associated with access and use of the online resources by Masters students in the country's universities. These students are products of an undergraduate system faced by many issues bound to have an impact on their general awareness and perceptions of the university library. For instance, at primary and secondary school levels, most of them never used libraries due to lack of these facilities; at the undergraduate level, they were intimidated by the large university libraries, underwent ineffective orientation and Communication Skills training and hence lacked information literacy skills. Due to their inability to access and use information as undergraduates, they relied heavily on their lecture notes (Kavulya, 2003; Kavulya 2004; Mutula, 2004). This study attempts to establish whether these students are accessing and using the online databases as they write their term papers, research proposals and projects or thesis.

### **1.3 OBJECTIVES OF THE STUDY**

The general objective of the study was to assess the impact of electronic resources accessed through INASP/PERI to teaching, learning and research activities in university libraries in Kenya.

#### **SPECIFIC OBJECTIVES**

- i. To establish the current status in relation to access and use of the online databases acquired through the INASP/PERI initiative.

2. To establish the extent of awareness by university library users of the availability of the INASP/PERI online resources in their libraries.
3. To find out the methods being used by the university libraries to market the INASP/PERI online resources.
4. To establish the extent to which reference librarians are involved in empowering users to independently access information through online databases.
5. To identify challenges faced by users and libraries in relation to access and use of the resources.
6. To identify challenges faced by Kenya's university libraries in sustaining the INASP/PERI initiative.

#### **1.4 RESEARCH QUESTIONS**

1. What is the current status in relation to access and use of the INASP/PERI-accessed database?
2. Are university libraries' users aware of the availability of the online electronic resources accessed through the INASP/PERI initiative?
3. What methods are being used by the university libraries to market and promote the electronic resources?
4. To what extent are librarians involved in teaching information literacy skills?
5. Are there any challenges faced by users and libraries in relation to access and use of the resources?
6. Are university libraries in Kenya facing any challenges in relation to sustaining the INASP/PERI initiative?

## **1.5 JUSTIFICATION OF THE STUDY**

The results of this study will be useful to all university libraries participating in the INASP/PERI programme. It is therefore expected that the results of the study will:

1. Help university libraries in evaluating their individual and collective strategies and resources put in place in relation to implementing the PERI programme.
2. Give INASP/PERI and KLISC feedback on their activities in Kenya's university libraries and especially the local challenges associated with implementing the PERI programme in these libraries.
3. Generate information upon which future research related to access and use of the online databases could be based.

## **1.6 SCOPE AND LIMITATIONS**

This study was designed to assess the impact of the INASP/PERI initiative on teaching, learning and research in Kenyan universities- public and private. According to the Commission for Higher Education (CHE), there are currently, 23 universities in Kenya: 7 public, 8 Chartered private and 8 private universities with Letters of Interim Authority from the Commission (CHE, 2007). The study involved four of these universities namely: Kenyatta University, University of Nairobi, Africa Nazarene University and the Catholic University of Eastern Africa, the first two and the last two owned by the government and privately owned respectively.

Each of the 23 universities in Kenya has a library. Some also have libraries in their constituent colleges. Financial and time constraints never allowed a study of all these

libraries. This is because the researcher was expected to carry out the research and compile the report within a limited time frame of three months besides continuing with course work and sitting for examinations. Lastly, although there are other users who access and use the INASP/PERI online databases, this study only focused on lecturers and Masters students who are expected to engage in serious research due to the nature of their work and study requirements respectively.

## 1.7 THEORETICAL FRAMEWORK

The study is based on the five Laws of Librarianship formulated by Michael Gorman and Walt Crawford in 1995. These laws are a modified version of the Five Laws of Library Science as advanced by S.R. Ranganathan in 1931 (Noruzi, 2004). The laws are aimed at serving as the framework for the present and future library service, bearing in mind the effect that technology has had and will continue to have in regard to library collections and service. Popularly known as Gorman's Laws of Librarianship, they include:

- *Libraries serve humanity*
- *Respect all forms by which knowledge is communicated*
- *Use technology to enhance service*
- *Protect free access to knowledge*
- *Honour the past and create the future*

### **Libraries serve humanity**

University libraries should avail relevant and timely information and knowledge through the INASP/PERI-accessed databases. It is through the use of this information

and knowledge that the users (lecturers, students and even librarians) will develop at the individual level and through research, contribute to the country's development.

### **Protect free access to knowledge.**

This law stresses equal access to information and knowledge by all users of university libraries without any kind of discrimination based on either gender, race, social and educational background, level of computer literacy etc. Also embedded in this law is the need for university libraries to be staffed with adequately trained and sufficient librarians. These librarians should have some subject-based specialization if they have to effectively assist users.

### **Use technology intelligently to enhance service**

User needs assessment makes librarians aware of the needs of their libraries' users. In this context therefore, users expect fast, efficient and quality services from the university libraries. Access and use of the online databases should therefore be made easy by empowering the users through provision of adequate training on information retrieval. The users should be given the necessary passwords and user identities of the databases relevant to their specific areas of specialization. Facilities should be put in place to enable the users to access and use the e-resources within and without the library. In addition, relevant information should be repackaged in other appropriate media and availed to those who, because of one reason or another, can not access and use it on the computer terminals. The libraries' services can also be enhanced through provision of photocopying and printing facilities, and e-mail services.

### **Respect all forms by which knowledge is communicated.**

This law calls on librarians and other users of the INASP/PERI online databases to also respect and appreciate other information resources in their libraries whether print or electronic. This is due to the fact that although technology has led to new ways of creating, storing, retrieving and disseminating knowledge, it has not changed the role of knowledge and information - to enlighten and empower humanity. Subscribing to the INASP/PERI databases and other electronic and online resources by the university libraries is therefore just a part of their growth. Users should therefore be made aware of the complementary role each information format plays in relation to the others. No one media should be discriminated upon.

### **Honour the past and create the future**

Closely related to the above law, Gorman's 5<sup>th</sup> law calls on users and librarians to respect and appreciate all the other information formats as technology now allows us to access and use the online digital formats. Besides their complementary roles, generation of new information in new formats is based on information in previous formats. The past and present information formats therefore form the basis of future new information and consequently, new innovations.

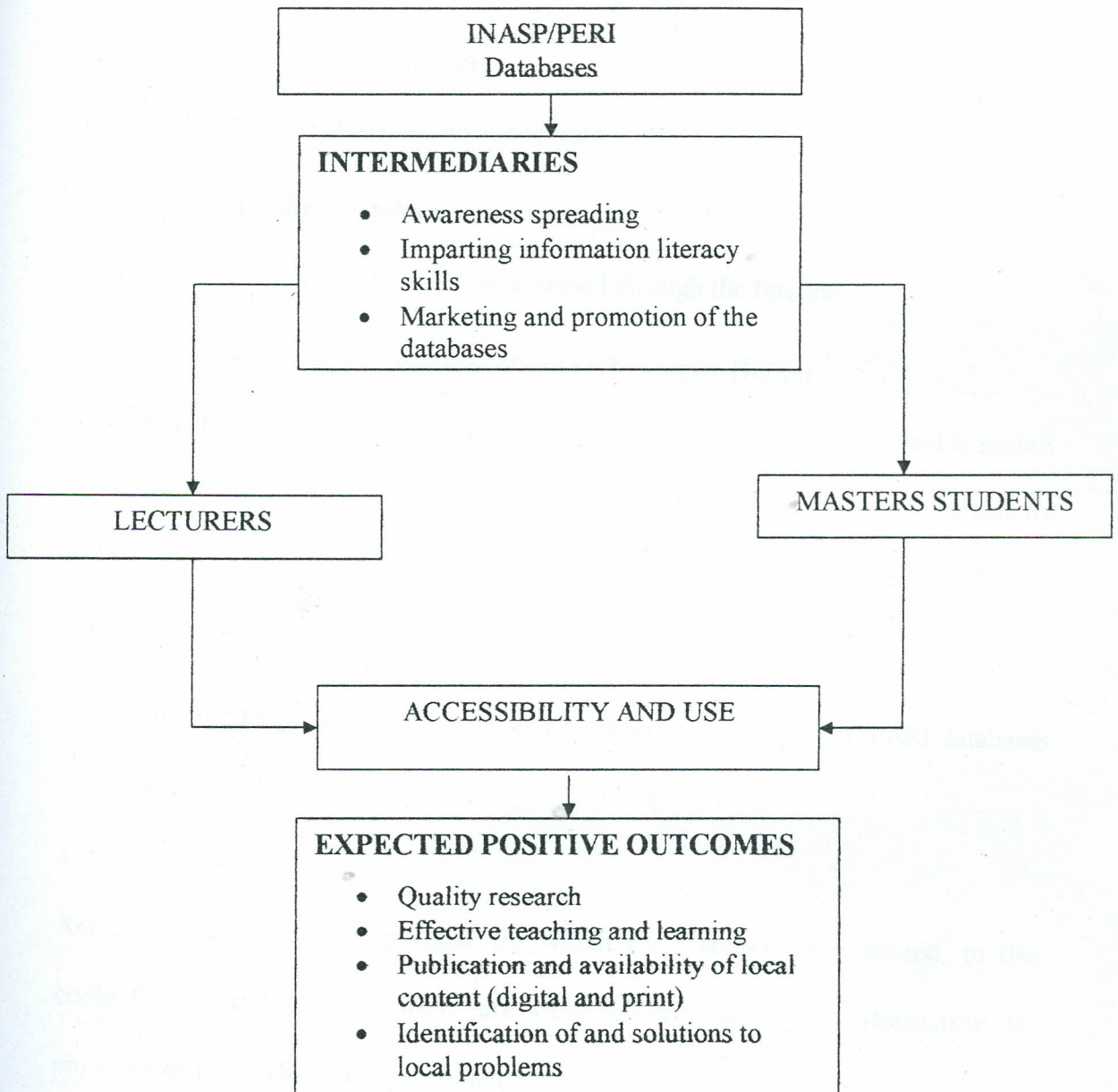
## **1.8 CONCEPTUAL FRAMEWORK**

The conceptual framework for the study shows how the variables under study are interrelated. The INASP/PERI databases are the dependent variables. This is because their access and use by both lecturers and Masters students depends on the following:

First each library in the study must be a member of KLISC in order for it to subscribe to the online journals and full-text articles provided under the PERI programme. Secondly, effective use of the online resources also depends on the users' awareness of the availability of the online databases in their respective libraries and their possession of the necessary information searching and retrieval skills acquired through information literacy training. Besides facilitating access and use, continued use of these resources is also dependent on continued marketing and promotion of the same by librarians. The independent variables in the proposed study are therefore awareness spreading, marketing of the online resources and teaching information literacy skills.

*Conceptual Framework Diagram*

**Accessibility and Use of INASP/PERI databases**



Source: The researcher, 2007

## **1.9 DEFINITION OF OPERATIONAL TERMS AND CONCEPTS**

### **1.9.1 Accessibility**

The degree to which the online resources are utilized by the intended users within and outside their university libraries..

### **1.9.2 An Academic Library**

In the context of this study, an academic library refers only to a library in a university.

### **1.9.3 An online database**

A collection of information remotely accessed through the Internet.

### **1.9.4 Information Communication Technologies (ICTs)**

The computer hardware and software and telecommunication links that enable society to create, collect, consolidate and communicate information in multimedia formats for various purposes.

### **1.9.5 Reference Librarian**

A librarian in charge of online resources and specifically the INASP/PERI databases in academic libraries.

### **1.9.6 Use**

Refers to the function or purpose for which the resources are utilized; in this context, university library users are expected to use online information for purposes of research, teaching and learning,

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This chapter is a review of literature related to access and use of online databases in general as well as those specifically pertaining the INASP/PERI databases in particular. The review is based on the issues mentioned in the research questions in chapter one. The chapter starts with a review of the role of the university library and how this has been impacted on by ICT use; and issues on accessibility and use of online resources are also discussed. Librarians' roles in relation to access and use of online databases are discussed under three interrelated subtopics: spreading awareness, marketing of online resources and imparting information literacy skills. The challenges associated with access and use of online resources (including INASP/PERI databases) in Africa as well as potential challenges in Kenya are reviewed; and lastly the chapter briefly looks at literature related to sustainability of the INASP/PERI initiative.

#### **2.2 THE ROLE OF THE UNIVERSITY LIBRARY**

The university library is expected to be a vital source of information and knowledge needed by both faculty and students. This information and knowledge is important as it forms the basis of the core activities of these institutions namely research, teaching and learning. It is the heart of the learning community, providing a place for students and faculty to do their research and advance their knowledge (Simmonds and Andaleeb, 2001). The reference librarian, with the support of all the other library

staff, is the intermediary between the producers of information and its users. The users of the university library (faculty and students) are, in turn expected to come up with new ideas or information based on what they have acquired from previous works. Besides contributing to the information cycle, the lecturers/researchers are expected to help their universities to channel out a well trained and skilled manpower which is ready to steer their societies or nations to development in all sectors: social, political, technological, economical etc.

In order to fulfill its objectives, which must be in line with the general objectives of its parent organization, the role of the university library according to Agara (1995) as quoted by Kargbo (2002) include:

- Provision of facilities for study and research geared closely to the academic setting of the parent institution;
- To secure, organize and service books and non-book materials required for the instruction programmes;
- Provision of current reading materials for keeping lecturers abreast of new developments in their subject areas and for research; and,
- To encourage students to develop the habit of self-education so that the library stock may contribute to their intellectual development and output.

### **2.2.1 ICT and the changing role of the university library**

According to INASP, there is an increased recognition of the vital role that information and knowledge can play in development and of the potential of new

information communication technologies (ICTs) within this. Zeleza and Olukoshi (2004) further recognize that the level and extent of scientific and technological discoveries have become a measuring index upon which the social, economic and political vigour of a country or region is gauged. Currently, the Internet is hailed as one of the ICT components which has radically changed the world in general and institutions in particular. University libraries all over the world have not been left behind in embracing this new technology. Mi and Nesta (2006) acknowledge this when they state that the explosion of the Internet has played an important role in academic libraries, as it has become an invaluable tool in learning, teaching and research. They sum up the advantages brought about by the Internet to academic researchers by pointing out thus:

*"...[If they are] equipped with PDA, laptop, ipod and digital cameras, users can communicate by e-mail, download full-text articles and produce work that may appear in print, electronic or as multimedia. Any of it can appear instantaneously in any part of the world, hosted by an academic site or posted on a personal blog" (p.415)*

In agreement, Jallow (2001) notes that as a result of technological changes, academic libraries are increasingly called upon to provide more relevant, up-to-date and timely information to a wide range of users; and that in order to satisfy the varied needs, they require availability and accessibility to a variety of information resources and formats: digital full text, sound graphics, images, multimedia, hypertext as well as print documents. Simmonds and Andaleeb (2001) indicate that the role of the

academic library has begun to change due to the advent of CD-ROMS, online databases and other electronic resources, new methods of electronic delivery and access to information. They further note that through the Internet, users of academic libraries can now easily access other libraries' resources such as online catalogues and unrestricted databases. Creth (1996) summarises that the environment of change is characterized by:

- Greater access to a range of information;
- Increased speed in acquiring information;
- Greater complexity in locating, analysing and linking information;
- Constantly changing technology;
- Lack of standardization of both hardware and software;
- Continuous learning for users and library staff;
- Substantial financial investment in technology (Klugkist and Gilbert, (1998)

Besides the changing role of the academic library, the nature of information is also changing. Hillenbrand (2005) observes that information is being transformed from the linear text-based information environments to the networked hyperlink non-linear environments of the Internet. These changes have led to library users being more concerned about what they can access from rather than what their libraries actually own.

Researchers in African countries have not been left behind in exploiting the benefits of the Internet in information generation, dissemination and sharing. Writing in an INASP/PERI Newsletter, Ballantyne (2006) observes that there are massive changes

in the way these researchers communicate with one another and how they produce and gain access to information. The author explains that if they are connected to various ICTs and have some essential skills, they can keep in touch with their peers at the click of a button. They are also able to publish and disseminate their own work, browse through whole libraries of reports and data as well as download the latest ideas for their work. However, some findings point to the fact that perhaps very few of the university libraries in Africa effectively support research, teaching and learning through ICT applications. A study by Rosenberg (1997), as cited by Kavulya (2006) not only found ICT applications in these institutions wanting, but also established that the libraries' value had declined to a near total collapse. This decline was characterized by low numbers of monographs per student, inadequate journal subscriptions and limited access to electronic information. As a result, the libraries were unable to support the core activities of their parent institutions namely teaching, research and learning. Quoting Taylor (2002), Mutula (2004) states that in the year 2000, African-produced content accounted for less than 0.05 percent of the global web content. Fortunately, this was the year that the PERI initiative was introduced in transitional and developing countries.

### **2.3 ACCESSIBILITY AND USE OF THE ONLINE RESOURCES**

According to the Research User Service Association RUSA (a committee of the American Library Association), if an individual with an information need is able to obtain information that can satisfy that need, the individual has access to information. Accessibility in the context of this study refers to the degree to which the

INASP/PERI online resources are usable by as many of the intended users (lecturers and students) as possible. This study recognizes that in a university environment, these users are constantly in need of information due to the nature of their work and study requirements respectively.

Simmonds and Andaleed (2001) emphasize that because academic library users have varying needs and expectations, it is the responsibility of the library staff to know these needs and expectations and strive to meet them. It can therefore be argued that the continued subscription to the INASP/PERI databases by university libraries in Kenya is as a result of the realization by these libraries that their users need to access and use the online resources besides other information formats found in these libraries (print, electronic, realia etc.).

Institutions providing access to the INASP/PERI databases in Kenya must meet certain requirements. Besides being members of KLISC, they must have the necessary networked infrastructure and provide the requisite computer hardware and software (Rosenberg, 2006). Statistics given by Were (2007) point at gradual improvements by KLISC members in relation to attaining the above requirements. For instance, at the inception of the PERI programme in 2000, only 10% of the institutions had Internet connectivity through dial-up, but PERI has now enabled 100% to have it. She further notes that although bandwidth in most institutions was not sufficient, 65% have so far increased it to the required standards.

Just like the other information resources, librarians must budget for online resources. Tenopir and Read (2000) argue that to best allocate budgets and select the options that will serve the greatest number of users, librarians must weigh pricing options and licensing restrictions and predict likely levels of use for each database selected. Although the authors recognize that predicting usage pattern and levels of use is difficult, it is important because prices or licensing restrictions are often based on amount of use, total number of potential users or number of simultaneous searches allowed.

Were (2007) states that it is hard to get national statistics of all potential users of the INASP/PERI databases in Kenya. This is due to lack of proper monitoring and evaluation of the programme. Institutions under the PERI initiative can only get usage statistics from willing publishers who capture them; this is despite the fact that all the institutions have equal access to the same databases irrespective of differences in the courses they offer. It is however important to note that this dilemma is not unique to Kenya.

Gairlo (2002) laments that in America, many of the most widely used peer-reviewed journals are accessible to libraries through expensive bulk package plans. Such plans force libraries to pay top-dollar for the resources their faculties require. In so doing, the libraries add to their collections a number of rarely used journals of minimal impact and value simply because they were bundled in with the journals they could not do without.

Subscription to online databases also necessitate that libraries come up with access policies to guide their use; and users must be made to understand their legal and ethical implications. According to Hannelove (1999), libraries have adopted access policies as a means of balancing rights with the libraries' mission to provide open access to information to all. Quating Orick (2000), the author stresses that, establishing well defined policies will help to clarify who has access to the Internet under what conditions, for what purposes and with what restrictions. In addition, the policies should consider how to integrate the new technologies and how its use reflects the objectives and values of the library

There is a dearth of literature on various factors that affect access and use of online databases. Some of these include the ability of the library to provide adequate computer facilities; librarians' attitudes; demographic factors; the level of awareness of the users; and information literacy skills. It is beyond the scope of this study to discuss all the factors that impact on access and use of online resources. However, since the INASP/PERI online databases are relatively new information sources in Kenyan university libraries, this study argues that it is the role of reference librarians in the country to ensure these resources are utilized to the maximum.

#### **2.4 THE ROLE OF INFORMATION INTERMEDIARIES**

Besides fulfilling the monetary and physical infrastructure requirements as members of KLISC, the university libraries are expected to employ the services of adequately trained reference librarians. The person should possess certain skills, knowledge and

competencies if he/she has to enable users make effective use of the online resources.

Borgman (1996) stresses that as users of online databases, librarians must have the:

- Conceptual knowledge of the information retrieval process – translating an information need into a searchable query;
- Semantic knowledge of how to implement a query in a given system; and
- Technical skills in executing the query, that is, basic computing skills and the syntax of entering questions as specific search statements.

Meadow (1992) emphasizes the need for reference librarians to know the kind of information available in a discipline or specialty served as well as the mechanisms of using information systems relevant to the subject or institution including how to load a database on a CD-ROM with a computer and how to access a remote service. He further stresses the need for the librarian to know the terminology of the specialty served; and lastly, the methods of interviewing users to draw out their information needs – the expression of their Anomalous State of Knowledge (ASK). Kaane (2006) points out that the reference librarian must have a solid theoretical and practical knowledge of the process of information needs seeking and use from a user perspective, in order to serve their clients efficiently and effectively. She further recognizes that skilled and competent staff can contribute towards improving the quality of reference and information services provided and further accessibility to all potential users.

The above-mentioned knowledge, skills and competencies alone will not lead to effective access and use of online resources. The reference librarians also need to carry out the following interrelated complimentary activities, namely: spreading awareness, marketing and promotion of the e-resources as well as imparting information literacy skills in the users.

#### 2.4.1 Spreading Awareness

Citing Weingand (2001), Kavulya (2004) argues that customers will gauge the usefulness of a library based on their past experiences and an awareness on the quality and types of services on offer. Therefore, the quality of these experiences both in library use and with library staff will determine how the service measures against customers expectations. The university library can therefore use marketing to promote awareness of changes in physical facilities, materials and services offered by the library and the quality of professionals available.

As users become more aware of the library, its resources, services and staff so do their familiarity with the library increase. According to literature, familiarity leads to increased use. A study carried out in Erie, Pennsylvania on usage of academic libraries by Simmonds and Andaleeb (2001) for instance established that the usage of these libraries is influenced most by a users familiarity with the library and its resources. The authors conclude that if library usage is to be increased, it is important that librarians find ways to familiarize users with the library.

Since the INASP/PERI online resources are new additional resources to be used by users who were accustomed to the print resources, they must be made aware of their availability in their respective libraries. This awareness spreading must be targeted at both users and non-users of the library. Green (1994) cautions that lack of awareness even among users, of additional services is a barrier to fuller library use. According to the author, users use the library in multiple ways as they increase their awareness of services offered.

#### **2.4.2 Marketing of Online Databases**

Marketing of library services is a vital activity that should not be ignored by libraries. The American Marketing Association as cited by Kaane (2006 p.3), defines marketing as,

*“...a social and managerial process by which individuals and groups obtain what they need and want through creating, offering and exchanging of products of value with others”*

In other words, if libraries have to ensure maximum use of their resources in general and the INASP/PERI-accessed resources in particular by their users, they must market these resources.

Libraries need to vigorously market their services now than never before, largely because as a consequence of ICTs, they are now facing stiff competition for their customers from other information providers such as cyber cafés, online book dealers, information consultants etc. (Kaane, 2006; Mi and Nesta, 2006; Markland, 2005;

Kumbar, 2004). Even within the library itself, the Internet has created a situation where the commercial subject-specific online resources like those accessed through PERI could be facing stiff competition from search engines especially Google. Also within the universities, increasing decentralization of access to information has resulted in computer laboratories becoming competitors to libraries as campus gathering points. Librarians must therefore demonstrate to the campus community that the library remains central to academic effort (Hisle, 2002).

Citing Snoj and Petermanec (2001), Kaane (2006) notes that libraries also need to come up with effective marketing programmes that can help them create competitive advantage through development of new services or changes to the existing ones to satisfy their users better; to improve the organizational status and image to different stakeholders; and thereby improve their performance in general. Kumbar (2004) adds that through marketing, libraries will be able to educate their users and non-users and hence change perceptions and enhance the clout and reputation of the library and its staff.

To Mi and Nesta (2006), the ultimate goal of marketing by libraries should be profitability, which in this context should be gauged on the basis of improved service, coupled with increased efficiency and measured by increasing use. Indeed, vigorous marketing has been reported to yield positive results. For instance, Said (2006) reports that the successful implementation of the Digital Library in Pakistan (an initiative of INASP/PERI) is partly due to the amount of training sessions conducted in individual institutions and the distribution of promotional materials to the relevant departments.

Besides imparting users with the necessary skills and knowledge to enable them use the resources, the training sessions also acted as marketing forums for the same.

A survey by Kavulya (2003) that aimed to find out the methods used by universities in Kenya to market their services and resources faulted the country's university libraries for not engaging in any formal marketing. The study reported that none of the four university libraries (KU, UoN, CUEA & USIU-A) reported to have been involved in any formal marketing research strategy: market segmentation, customer satisfaction studies, SWOT analysis, image analysis or other formal techniques in collection of data about their users perceptions, awareness of usage of the available or specific requirements. Part of this non-involvement was due to inadequate funding and its accompanying effects of poor facilities etc. It was therefore the concern of these libraries that any marketing initiative would likely lead to higher user expectations and bigger demands which could not be met then. The same study, however, established that users were made aware of their libraries collections and services through brochures, newsletters, library manuals and guides and Internet home pages.

### **2.4.3 Imparting Information Literacy Skills**

New and fast changing information communication technologies have led to vast amounts of information being generated and availed in different formats: print, electronic and digital. This has consequently led to a requirement that users must develop sophisticated information handling skills if they have to access and

effectively use the information. According to the American Library Association (ALA), information literacy skills is now viewed by many policy makers and educators as critical to the creation of an equitable global Information Society – a society in which both the developed and developing nations can share in social and economic development.

The California Academic and Research Libraries Task Force (1997) defines information literacy as,

*“...the ability to effectively identify, access, evaluate and make use of information in its various formats, and to choose the appropriate medium for communication. It also encompasses knowledge and attitudes related to the ethical and legal issues surrounding information and information technology”*  
(Eisenberg, 2004 p.6).

The importance of information literacy skills to academic library users can not be overstated. Kavulya (2003) for instance stresses that since Masters students need to demonstrate competence in their areas of specialization through well argued papers backed by the evidence of having a firm grip of facts and the ability to synthesize information, these skills will make their tasks more manageable. Lectures also need these skills to enable them search and retrieve information for teaching and research. In relation to this, the Association of College and Research Libraries (ACRL, 2000) of the American Library Association (ALA) states that an information literate student is one who is able to:

*“...determine the nature and extent of the information needed; access needed information effectively and efficiently; evaluate information and its sources critically and incorporate selected information into his or her knowledge base and value system; use information effectively to accomplish a specific purpose; understand many of the economic and social issues surrounding the use of information, access and its use ethically and legally.” (Kiondo and Msuya, 2005 p.79)*

Although librarians are expected to be at the forefront in imparting information literacy skills in users, they need to work closely with other stakeholders for their efforts to bear fruit. Hannelove, (1999) emphasizes the need for the librarians to work closely with faculty and technology experts in order to set up appropriate learning and teaching environments and to be able facilitators in the learning and teaching process. This is because the lecturers have the specific subject expertise and understanding which should complement the librarian's knowledge of searching and retrieval skills, ethical and legal issues surrounding library resources and services. This in essence implies that for effective information skills to be imparted in students to enable them effectively use the INASP/PERI databases, librarians must first train lecturers on how to retrieve information from their subject-specific databases. Librarians also need the support of their parent institutions in terms of policy and materially (Kavulya, 2003).

To this end, Hillenbrand (2005) stresses the need for librarians to shift their focus from the traditional guardian of knowledge to the more modern 'intermediary' to that

of the post-modern 'enablers'. Quoting Soy (1996) the author explains that the librarian as an enabler is one who,

*"...makes it possible for others to learn and use new sources and ideas, connecting them with both the print and electronic resources as well as helping them to learn the critical information literacy skills needed to evaluate information. The information professional also becomes a continuous learner to assume his/[her] role, learning how to perform and manage as a teacher and trainer on demand" (p.604)*

Simmond and Andaleeb (2001) suggest that what is taught to users during orientation or course- related instruction sessions has to be reinforced with other effective search techniques to make it easier for them to utilize those techniques when they are working independently from library environments. In agreement, Borgman (1996) in a paper titled "*Why are online catalogs still hard to use?*" acknowledges that no single form of instruction will be adequate or appropriate for all online catalog users. The author argues that online catalogs and resources will only be easier for most people to use if they can find a level and types of instruction or documentation that suits their needs. The author roots for online instructional materials. This is in recognition of the fact that most users are now accessing e-resources both within and outside the library's walls

Despite the importance attached to information literacy, African university libraries are not taking it seriously. Mutula (2004) laments that whereas information literacy

skills have been included in the curriculum of the colleges and universities in the West, the contrast is happening in the developing world, especially Africa. He notes that in sub-Saharan Africa, many students at various levels of education are unfamiliar with a variety of information sources and services within and outside their libraries. This, coupled with the uncoordinated, purely introductory and non-examinable user education, consequently leads to underutilization of the meager information resources found in these libraries. He concludes that lack of information literacy hampers effective survival in an Information Society.

In an INASP/PERI commissioned survey carried out between 2004-2005, which aimed to find out the state of digitization in university libraries in Africa, Rosenberg (2006) reports that in Sub-Saharan Anglophone Africa, most libraries undertake some sort of information literacy training at the undergraduate level. However, only 16% of the libraries that returned the study's questionnaires supported an integrated information literacy programme while 21% offered no training at all. The same study also established that 60% of the libraries offered training in e-resources use to academic staff and researchers, but usually as one-off workshops. Many of the respondents felt this practice was not very effective. Some Kenyan universities were included in this study.

Kavulya (2003) sought to identify the challenges facing information literacy efforts in Kenya. He established the following: Information literacy in Kenyan university libraries is associated with scattered efforts; as a result, majority of the students pass

through the university system without ever mastering the art of information retrieval and use. Communication Skills (a common unit) is taught by non-library staff to undergraduates and only once in their university life. The course is also characterized by large groups hence the use of the lecture method due to lack of personnel. Lastly, there is a general lack of evaluation of its effectiveness. Generally, Kavulya's study findings place information literacy efforts by Kenyan university libraries far from achieving what is called for in the literature.

The United States International University-Africa (USIU-A), one of the institutions covered in the above study currently has an information literacy programme for all new students, lecturers and other staff. According to Kaane (2005), the programme entails orientation, library instruction and continued assistance to library users throughout the semester. The author further explains that an element of information skills competence is incorporated in a common unit, Planning and Strategies for Success (FYE 1010). The library component topics are: an introduction to the library resources; using the library; gathering and managing information by using online catalogues, periodical indexes and e-mail; and evaluating information. This programme has clear objectives. Students are assessed and the marks included in the final grade for the FYE 1010 unit. It is however interesting to note that despite the library's efforts the USIU-A programme faces some challenges. There is lack of cooperation between users and librarians; some users, especially lecturers fail to attend pre-arranged assistance sessions; and lack of a clearly written policy.

## **2.5 CHALLENGES WITH ACCESS AND USE OF ONLINE RESOURCES IN AFRICA**

Although most authors acknowledge the availability and potential of ICTs in relation to information production, dissemination and sharing, they caution that realizing this potential for developing countries and Africa in particular is an uphill task. For instance, according to Alemna and Antwi (2002), ICTs have led to a lot of information being generated, published and availed worldwide. However, most of this information is inaccessible in African countries.

Jensen (2006) observes that the use of the Internet has grown relatively rapidly in Africa. The author, however, laments that although this are encouraging trends, the differences between development levels of Africa and the rest of the world are much wider in this area than they are using more traditional measures of development. The author narrates that in Africa, each computer with Internet connectivity supports a range of 3-5 users. This puts current estimates of the total number of Internet users at around five to eight million, implying 1 computer for 250-400 people, compared to the world average of about 1 computer for every 15 people and North America and European average of 1 in every 2 people.

Zezeza and Olukoshi (2004) state that the impact of ICTs in relation to production, organization, packaging, marketing, distribution and communication of information through the use of CD-ROMs and online databases, e-mail, Internet and other technologies that make (virtual) communication simpler, easier and cheaper is widely

felt in the West and not in Africa. They attribute this to the fact that in the West, academic infrastructure is robust and the technical resources to establish, maintain and upgrade infrastructure are robust. Besides, the community of scholars in the West is large enough to create need and exert strong academic muscle to demand and obtain them. In contrast, countries in Sub-Saharan Africa are home to fledgling scientific communities that are often ineffective in the creation and communication of knowledge. A survey carried out by the authors that aimed to examine the use of ICTs in knowledge production, communication and access in African universities report that nearly nine out of ten of the respondents were unaware of the availability of an online journal in their respective disciplines.

From all the above findings, it is evident that there is a big difference between Africa and the West in relation to general ICT application in information production and sharing. These disparities, otherwise referred to as digital divides, are what initiatives like PERI aim to reduce. However, its implementation has not been without challenges for examples, Priestly (2005) cites the following:

- The ratio of computers to the number of potential users of information remains problematic
- Where computers exist, access to the Internet in many countries is extremely expensive.
- Available bandwidth is insufficient for local demands and does not support optimal use. Compounding this, bandwidth is frequently consumed by low

priority bandwidth hungry purposes which are non-educational and do not support research.

- In relation to the above, there is the challenge of how to manage the limited available bandwidth resources in the best and most efficient way, as well as how to make more bandwidth available for high priority use.

Rosenberg (2006) highlights the following challenges:

- E-resources are available in a majority of the libraries but facilities to access are poor.
- There is a general lack of funds for the purchase of computer hardware, software and e-resources.
- Most university libraries are faced with the challenge of lack of or retention of trained staff. This was the key challenge, which is made worse by the failure of library school curricular to keep up to date with the needs of the new e-environments. Thus, new recruits do not have the necessary ICT related knowledge and skills.
- There's a general failure by libraries to avail local content electronically.
- All e-developments have depended on external funding and will continue to do so.

### **2.5.1 Other potential challenges in Kenya**

Before the introduction of PERI in Kenya, Rosenberg (1997), as cited by Kavulya (2006), had established that senior faculty members in the country's universities had

adopted other strategies to obtain information. These included personal contacts in the First World to obtain reports and journal articles; writing for reprints; travel outside the country and development of personal libraries; purchase of key texts and subscriptions to journals. This scenario was blamed on the inadequacies of their university libraries to provide for their information needs.

In the more recent past, some new developments in higher education in the country have the potential of impacting on the use of the INASP/PERI databases. The country's press has been awash with advertisements and articles on the so many satellite colleges being opened up by the Kenyan public universities. This is in part due to the increased higher education demand being witnessed in the country as well as the universities' attempt to attract large numbers of students in order to generate more revenues due to insufficient government funding. The same universities are also collaborating with many middle level colleges in offering their degrees. These developments have led to large numbers of students being admitted in the varied programmes: regular, parallel, open or distance learning and part-time or evening classes. These could be some of the factors contributing to the challenge of small number of computers against a large population of users as stated earlier. Another possible challenge is that the same lecturers are expected to teach the large numbers of students yet the Public Universities Inspection Board laments that the lecturer-student ratio in these institutions is low (Siringi, 2007). In short, the increased enrollment is killing research in the country as the heavy teaching load leaves the

lecturers with little or no time to research and publish. Yet another negative result is the practice of moonlighting by the same lecturers in an effort to make extra money.

The Public Universities Inspection Board (2007) further established that public university libraries in Kenya are still unable to provide sufficient books and journals as they do not meet the benchmark 60 book titles per degree programme. It therefore recommended that these libraries should be made digital to enable lecturers and students to share information besides enabling them to access quality, current and relevant information.

In an article titled "*Time to put research into action: alarm over the huge turnover of scientific studies and equally high rate of diseases, hunger and poverty*", Gatonye (2006) accuses Kenyan scholars of not pushing for implementation of their research findings in order to solve identified local problems. Most scholars in the country simply engage in research because they have to conform to international and national obligations requiring them to publish at least a paper within a given time. Their research is full of duplication with no solutions to identified problems. He thus concludes that the researches are simply carried out simply for acquiring doctorate degrees and hence, are purely for academic purposes. If true, then these views imply minimal or non-use of the INASP/PERI e-resources for the purposes they were intended.

Student's information seeking behaviour could also impact on the use of the INASP/PERI e-resources. The modern-day students are turning to the web for their information needs rather than to their libraries' resources. The Net generation prefer search engines especially Google as they perceive them to be fast and easy to use. On the other hand, the commercial peer-reviewed and subject specific databases provided by their libraries are not easy to use and are therefore perceived to be more time consuming (Johnson, 2001; Markland, 2005; Mi and Nesta, 2006). Markland's study at Manchester Metropolitan University (UK) further found out that lecturers did not use the online databases and were therefore unlikely to encourage students to use them.

Other challenges associated with using online databases emanate from the design and indexing languages. Although these are well documented, they are beyond the scope of this study. It is however important to note that the searching options given by the databases, according to the literature, also act as a barrier to access. For example, a user searching in the Emerald database (<http://www.emeraldinsight>) can use either the quick search or the advanced search techniques. Markland (2005), quoting other studies reports that the use of complex/advanced queries is 'simply not worth' because 'there are useful behaviour patterns that are quick and easy to perform. The author therefore concludes that the very existence of these quick, easy behaviour patterns then cause individuals to choose them even when they are not necessarily the best behaviour from a functional point of view.

According to Borgman (1996), people carry over knowledge from one automated system to the next, just as they carry knowledge of card catalogs to the online catalogs. And this is confirmed by Markland (2005) who concludes that not only do students use search engines extensively, but that they are likely to want to use them in the simplest way possible and apply their searching behaviour patterns to other web-based services.

## **2.6 SUSTAINABILITY OF THE PERI INITIATIVE IN KENYA**

As noted earlier, the PERI initiative was introduced in Kenya in 1999/2000. The initiative was funded by donors from its inception up to 2003 when Kenya was challenged to either meet the cost of journal subscription or drop out of the programme, a move that led to the formation of KLISC. Through this consortium, participating members pool their financial resources and thus share the costs of sustaining the programme. It is worth noting that KLISC has been able to sustain the programme since then because, according to the literature, African countries are accused of over dependence on external funding to run such initiatives.

In an INASP commissioned review of ICTs in Africa, Adeya (2000) for instance concludes that donors or internal organizations using systems that may be inappropriate to local conditions have sometimes started ICT initiatives in Africa. However, once handed over, these initiatives are not sustainable. This observation has been reiterated by Kavulya (2006) who states that Kenyan university libraries have largely depended on funding by initiatives like PERI. Although the author acknowledges the usefulness of

donor assistance, he warns that such assistance comes with various shortcomings: they only run for a specified period of time after which these libraries become unable to sustain the level of collection development, journal subscriptions or even carry out training programmes and provide equipment formerly supported by donors. This study sets to find out how university libraries in Kenya are going about the above activities nearly five years after INASP/PERI withdrew funding of the programme in Kenya.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter discusses the research methodology of the study. The key elements in this chapter include the research design, the population, sampling design, sample size and methods of data collection. Pertinent issues in research like data validity, reliability and ethical issues are also discussed.

#### **3.2 RESEARCH DESIGN**

The study used descriptive survey design. This is a kind of research designed so that information about a large number of people (population) can be inferred from the responses of a smaller group of subjects (MacMillan and Schumacher, 2001). The study therefore discusses the impact of the INASP/PERI online databases on research, teaching and learning in Kenyan universities based on the respondents' experiences, attitudes and perceptions.

#### **3.3 POPULATION**

Population refers to an entire group of individuals, events or objects having a common observable characteristic (Mugenda & Mugenda (1999). The study population comprised selected lecturers, Masters students, reference librarians and university librarians in both public and private universities. The Masters students were from the following departments in the various institutions: Development studies, Sociology and Languages (UoN); Education, Library Science and English (KU);

Education; Theology and Commerce (CUEA); and Theology and Commerce (ANU). Africa Nazarene has only two Masters programmes. Most lecturers came from the above departments with a few from other departments like Mathematics, Computer Science and Journalism.

### **3.4 SAMPLING DESIGN**

Both probability and non-probability sampling techniques were employed as necessitated by the nature of the subjects to be used in the study. Selection of the university libraries under study was done through stratified sampling of all the university libraries on the KLISC list into two groups; private and public. Simple random sampling was then carried out on each group, ending up with Kenyatta University and University of Nairobi (public) and Catholic University of Eastern Africa and Africa Nazarene University (private).

The study also used purposive /purposeful sampling to select respondents. This is a technique that allows a researcher to pick those subjects that possess the required characteristics (MacMillan and Schumacher, 2001). The cases selected had the required information with respect to the objectives of the study (Mugenda and Mugenda, 1999; Kombo and Tromp, 2006). The respondents were classified into four groups: lecturers, Masters students, university librarians and reference librarians. Lecturers were selected because, due to the nature of their work, they are expected to engage in continuous research. Masters students are also expected to engage in

research as they write their term papers, research proposals and projects or thesis as required in their specific areas of specialization.

The reference librarians as information intermediaries are supposed to facilitate access and use. University librarians on the other hand are the chief decision makers charged with the responsibility to justify to their universities' administrations the need to acquire and provide particular resources and services in the library. In this context, they must justify the importance of the INASP/PERI online resources for the library to be given the necessary financial and moral support.

### 3.4.1 SAMPLE SIZE

The study targeted 136 respondents, 34 from each institution. These include:

**Table 1: Sample size**

Category	Number of respondents
Library staff	
a. University librarians	4
b. Reference librarians	4
Library users	
a. Lecturers	56
b. Masters students	72
<b>Total</b>	<b>136</b>

### **3.5 DATA COLLECTION METHODS**

The researcher acknowledges the various options available as data collection methods or research instruments, each with its advantages and limitations. However, due to the nature of the information sought and the population size, the study employed the use of questionnaires and interview schedules as data collection methods. These were deemed to be the most appropriate in collecting the type of data required for this study.

#### **3.5.1 Questionnaires**

Semi-structured questionnaires were used to collect data. A questionnaire is a carefully designed instrument for collecting data directly from people. It consists of questions and statements (Ogula, 2006). Two sets of questionnaires were used: one for lecturers and another set for Masters students. The questionnaires were chosen largely due to their relatively high return rate and reliability (Robson, 2002; Mugenda and Mugenda, (1999). Closed-ended questions gave respondents a list of all possible alternatives that best described a given concept. This data or information was complemented by the responses to the open-ended questions that gave respondents the complete freedom of response in their own words about the concepts under study.

#### **3.5.2 Interview schedules**

These were used to gather information from the reference and university librarians. The interview schedules were in the form of a set of questions (closed and open-ended) written out with spaces provided for filling in the answers. Besides being

economical, they were expected to lead to high reliability of the information gathered (MacMillan and Schumacher, 2001) because all the respondents in the university and reference librarians' sub-categories were subjected to the same questions.

### **3.5.2.1 Instrument testing**

The questionnaires were pre-tested on small samples of two sub-groups (lecturers and students). Necessary corrections were made to improve the instruments before they were used in the final data collection. The respondents in the pre-testing did not participate in the main study

## **3.6 RESEARCH PROCEDURE**

The researcher made initial visits to all the institutions in the survey to request for students registers in 3 different departments per institution. Simple random sampling was done so as to get representative samples of 6 students per department. This was followed by a request through their lecturers or class representatives on the most convenient day/time when the questionnaires could be administered. Cluster sampling technique was used to select lecturers. This was due to the fact that given the nature of their work, it was going to be difficult to locate an adequate number of lecturers if any type of probability sampling was used. The researcher made telephone calls to book appointments with the reference librarians and university librarians. This was followed by actual interviews on the agreed days

### **3.7 DATA VALIDITY AND RELIABILITY**

White (2006) stresses that in research, validity is concerned with the idea that the research design fully addresses the research questions and objectives that the researcher is trying to answer and achieve. Reliability on the other hand is about consistency and research; and whether another researcher could use your design and obtain similar findings.

In relation to the above, the research instruments used in this study (questionnaires and interview schedules) aimed at collecting reliable and valid data. As such, besides their approval by the supervisor, two sets of questionnaires were pre-tested on small samples of the respondents. The necessary corrections were made to improve validity and reliability.

### **3.8 ETHICAL CONSIDERATIONS**

Ethics are moral principles and values that govern the way an individual or group conducts its activities (White, 2006; Mugenda and Mugenda, (1999)). The researcher therefore maintained a high standard of integrity throughout the research. Permission was sought from the relevant authorities in the institutions and in one of them, the researcher was given a letter from the Deputy Vice Chancellor (Academic) permitting her to carry out the research. Others only required an introductory letter from the researcher's university and this was readily availed. Through a confidentiality note on the questionnaires, all the respondents were informed of the reason for carrying out this research. Besides, they were not expected to give their personal information

whose use in the study could lead to an infringement on their privacy. They were assured of the use of the information gathered from them for academic research only.

### **3.9 ADMINISTRATION OF THE INSTRUMENTS AND LIMITATIONS**

The researcher personally carried out the interviews and distributed the questionnaires. All the four university and the reference librarians (four) in the sampled institutions were interviewed. All the eight respondents were very cooperative and availed themselves on the agreed days.

One major challenge encountered during the administration of the questionnaires was getting and convincing lecturers to fill them. Some claimed to be very busy with examinations, teaching practice or administrative duties and could not even accept a request by the researcher to leave the questionnaires behind and pick them later. Whenever this happened, the researcher moved on to the next willing lecturer since she had used cluster technique to sample them. Out of the 56 questionnaires given out to lecturers 45 were returned representing an approximate return rate of 80%.

Another challenge experienced was the administration of the questionnaires to students at the University of Nairobi as the exercise collided with examinations; but since the examinations brought all the selected students together, it was easier to locate them and administer questionnaires to groups. Out of all the 72 questionnaires administered to students, 58 were returned, representing an approximate return rate of 81%. Generally therefore, the total return rate for questionnaires was approximately

80% and the total response rate (both questionnaires and interviews was approximately 82%).

### **3.10 DATA ANALYSIS AND PRESENTATION**

The study employed both quantitative and qualitative techniques in data collection and therefore both qualitative and quantitative techniques of data analysis were used. Analysis was done using the computer-based Statistical Package for Social Scientists (SPSS). Some output tables from SPSS were exported to Excell and presented in the form of tables, graphs, and pie charts.

## CHAPTER FOUR

### DATA ANALYSIS AND PRESENTATION

#### 4.1 INTRODUCTION

This chapter presents the findings of the survey conducted in the four selected universities in Kenya namely: Africa Nazarene University, the Catholic University of Eastern Africa, Kenyatta University and University of Nairobi. The issues examined include:

- The current status in relation to access and use of online resources;
- The extent of users (lecturers and students) awareness of the availability of the resources in their university libraries;
- The methods used by the university libraries to market and promote the online resources;
- The challenges faced by individual institutions as a result of being members of KLISC;
- The challenges faced by university libraries and their users in relation to access and use of the INASP/PERI databases;
- Sustainability of the PERI initiative and the future of KLISC.

## 4.2 THE CURRENT STATUS IN RELATION TO ACCESS AND USE OF ONLINE RESOURCES

### 4.2.1 Available facilities for access and use of online databases

The study sought to establish the current status regarding access and use of online resources and therefore data was collected on the following: total number of students; total number of Masters students and the lecturers; and the total number of computers in the main campuses connected to the Internet through which the students and lecturers could access and use the online databases. The Table 4.1 gives a breakdown of the findings in their approximate numbers.

**Table 4.1: Approximate total number of users and computers in the universities**

University	Total no. of students	Total no of Masters Students	No. of lecturers	No. of library users	No. of computers	Ratio of computers to users
ANU	1,000	15	42	1,042	20	1:52
CUEA	4,328	152	130	4,458	6	1:743
KU	22,000	1,264	747	22,743	6	1:3791
UoN	30,000	3,270	1,600	31,600	86	1:367
<b>TOTAL</b>	<b>57,328</b>	<b>4701</b>	<b>3119</b>	<b>59,847</b>	<b>118</b>	<b>1:528</b>

From the above statistics, it is evident that although the university libraries are providing their users with online resources through the PERI programme, effective

access and use of these resources is largely being hampered by provision of inadequate computer facilities. This was mentioned by respondents in all the sub-groups (students, lecturers, reference and university librarians) as one of the major challenges to access and use of online resources. The cumulative ratio of 1:528 computers to number of users is even higher than Jensen's (2006) estimates that in Africa, one computer with Internet connectivity supports a range of between 250-400 users. Apart from ANU, individual institution's ratios are too high that maximum utilization of the online databases can not be realized.

In relation to the above, the study also established that some of the universities were providing access through departmental computer laboratories. However, students cited uncooperative computer technicians and virus-infested computers as other factors that hindered access and use of the resources. Lack of space, was mentioned by users and librarians as another factor hampering access especially due to the large student numbers being enrolled in various programmes (regular, parallel, open learning and evening classes). In one of the universities, the small library room housing the computers was also being used as the audio-visual as well as the recording room. In another university, the computer laboratories also doubled up as lecture halls. These findings concur with those of an earlier study by Rosenberg (2006), which concluded that although university libraries in Africa were providing their users with online resources, inadequate facilities for access impacted negatively on their use.

#### 4.2.2 Passwords and user identities

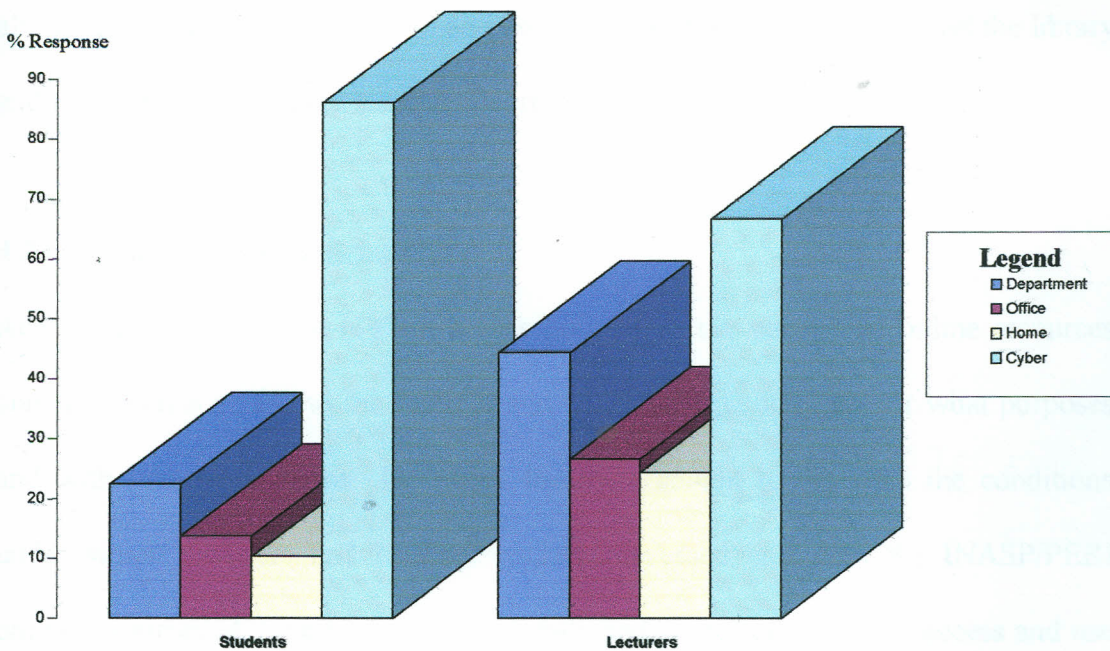
Although access to most of the online resources is depended on Internet Protocol (IP), there are a few whose access requires log in using the given databases' passwords and user identities. The study however established that 60% of the lecturers and 60% of the students had no passwords and user identities to the databases. Only two out of the four reference librarians saw it mandatory to give users passwords and identities. The following are the reasons given by the librarians to support their decisions:

- Users are not given passwords and identities due to fear of what they could do with them for example, sharing with their friends which could lead to copyright infringement.
- Only students in the open learning programme needed user passwords and identities because they do not have continuous access to the university library. They are given on request.
- All users should be given so as to enable make maximum use of the resources.
- Given the inadequate access facilities in the university library, all users need the passwords and identities to enable them access and use the resources outside the library.

### 4.2.3 Access of online resources outside the university library

When asked to indicate where else they accessed online resources besides the library and departmental computers, 86% of students and 67% of the lecturers indicated cyber cafés; 27% of the lecturers and 13% of the students chose office while 24% of the lecturers and 10% of the students chose home. Figure 4.1 gives the breakdown of the responses.

**Figure 4.1: Access of online resources outside the University library by lecturers and students**



It should not however be assumed that these percentages represent users' access to and use of the INASP/PERI online databases as only 18% of all the respondents mentioned and indicated they used some of these databases as compared to 82% and

73% of students and lecturers respectively who mentioned Google and Yahoo! as the databases they knew and used. The few databases mentioned include: Emerald, Ebsco, Jstor, Hinari, Oxford and Wiley Interscience. This concurs with Markland's (2005) study findings that most library users and especially students preferred search engines especially Google as it is perceived to be fast and easy to use. Limited access to the INASP/PERI online resources in cyber cafés, at home and in the office could further be limited due to the fact that some users are denied user passwords and identities and can only access search engines from these places. The implication is that the university libraries are competing for the same users with these other alternative sources of information and hence the need to vigorously market the library and its resources as vital to teaching, learning and research.

#### **4.2.4 Library access policies**

According to Hannelove (1999), access policies in the context of online resources clarify who has access to the Internet and under what conditions, for what purposes and with what restrictions. The study therefore sought to establish the conditions under which lecturers and Masters students accessed and used the INASP/PERI online resources. All the libraries under study had no policy regarding access and use of the resources. Only one of the libraries mentioned conditions for access and use of online resources in its rules and regulations. As a result of these, most users (58% students and 67% lecturers) indicated that they were not aware of their library's access policy. But information gathered on other issues for instance on factors that hamper effective access and use of online resources point at closed and restricted

access to the resources. All the librarians indicated that there were set time limits for access: and these varied from one library to another but all ranged between 15 minutes to 1 hour per user. In one of the libraries, there was no time limit from beginning of the semester until towards the end when most students were writing term papers and reading for examinations. In another institution, the students were required to have paid at least three quarters of the semesters fees plus Ksh200 Internet use fees to be able to access the resources. In yet another library, the users who had no downloading gadgets were not allowed to print, but copy by hand any relevant information from the databases. All these issues affect utilization of the online databases.

#### **4.2.5 Provision of related facilities and services**

Maximum utilization of online resources is largely depended on provision of other related library information services like printing, photocopying and e-mail services. When asked whether users had access to these services within their university libraries, two out of the four reference librarians indicated that they provided photocopying services. Three libraries used e-mail to send identified articles to Masters students and lecturers on request. Two libraries provided printing services at a fee; but in one of the libraries, the articles had to be sent to a printer outside the library building.

In relation to provision of printing services, responses by one of the librarians differed

with students' and lecturers' views as the users indicated that they were not provided. The users lamented the lack of these services especially given the fact that they were restricted on the time they could use a computer terminal.

### **4.3 THE EXTENT OF USERS AWARENESS AND USE OF ONLINE DATABASES IN THEIR LIBRARIES**

Online information resources are a relatively new entry in most university libraries in Kenya. The study strived to establish the extent to which both lecturers and Masters students were aware of the availability of the INASP/PERI online databases in their local libraries. It was established that 73% of the lecturers and 69% the Masters students were aware. Although the users associated use of online resources with fast access to current and varied information on any one given topic or issue, their relatively high awareness rates did not translate into nominal use of print resources that were said to be preferred because they were more readily available. Most users acknowledged that online and print resources complemented each other. Figure 4.2 shows the awareness levels of availability of online resources in the university libraries versus the use of the two resources by both Masters students and lecturers. The online resources include both academic databases accessed through INASP/PERI and search engines.

**Figure 4.2:Extend of awareness of online resources versus use of online and print resources**

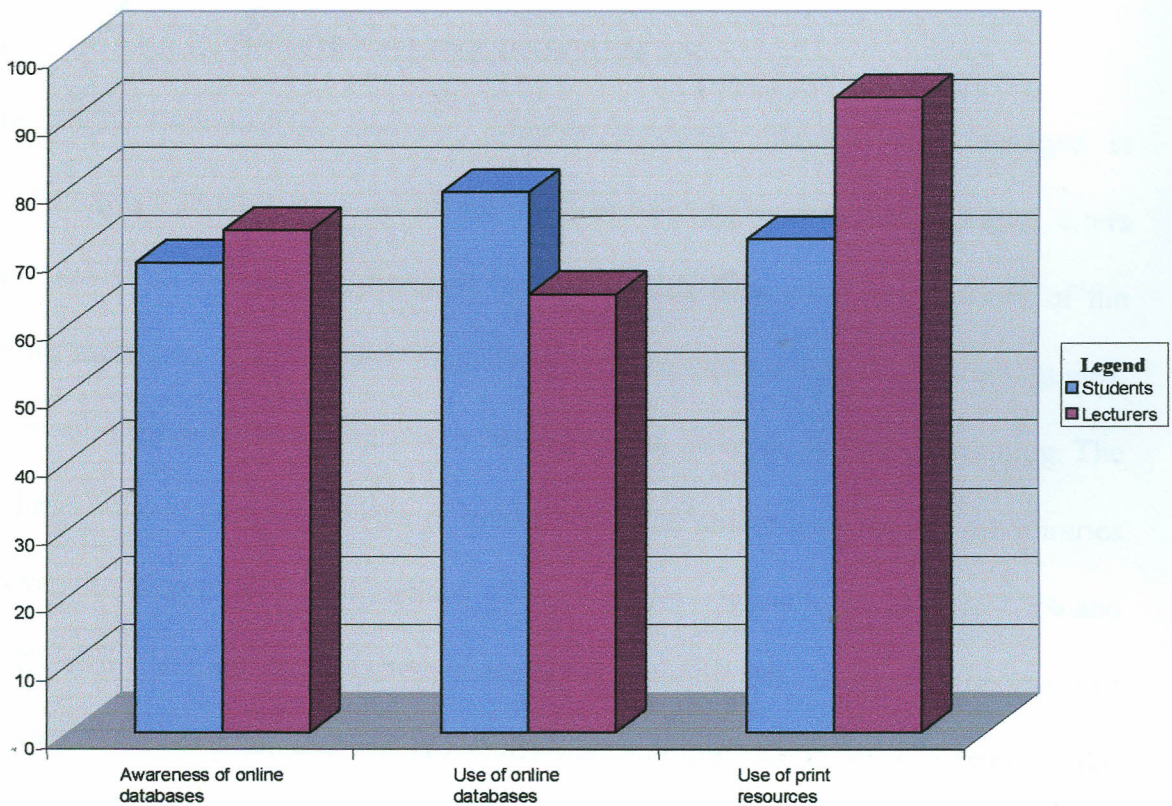


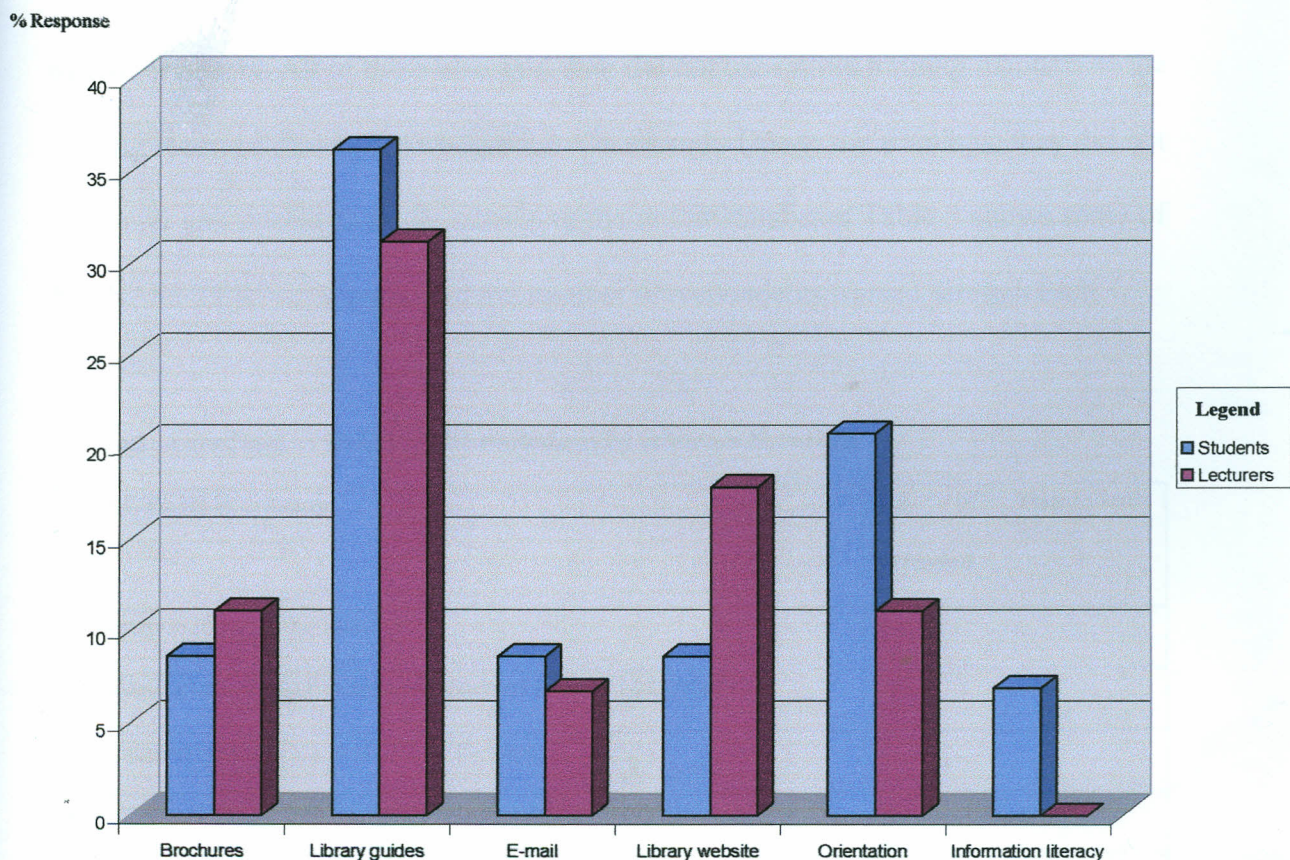
Figure 4.2 clearly shows that more students were using more online resources than print while their lecturers were using more print than online resources. As a result of this, one of the university librarians said the library was forced to subscribe to core titles of print journals even if the same were available in digital formats. This state of events is in line with the findings of Elsevier Science (1996) that Postgraduate students are more likely than academic staff to use online systems and that journal readers have emotional ties with paper. According to one of the university librarians,

the lecturers' preference for print resources has forced the library to continue subscribing to both online and print journals of the same titles.

#### **4.4 MARKETING OF ONLINE RESOURCES**

The study attempted to find out whether academic libraries were engaged in marketing and promotion of the online resources and the various methods used. Users were asked to indicate the methods through which they were made aware of the online databases. The various methods given included brochures, library guides, orientation, e-mail alerts, library website and during information literacy training. The findings point at minimal or lack of marketing of the online resources by the libraries as even the most widely used method – library guides – was chosen by just 31.1% and 36.2% of the lecturers and Masters students respectively. This supported the views of one reference librarian and one university librarian that due to various reasons like lack of funds and support from other library staff, it was difficult to carry out serious marketing of the online resources. The findings also confirmed the lack of information training for lecturers as none of them chose it as a method through which they were made aware of the availability of the online resources in their libraries; but the same was chosen by only 6.9% of the students. Figure 4.3 summarizes the percentages derived from the users' responses.

**Figure 4.3: Methods through which lecturers and students were made aware of availability of online databases in their libraries**



## 4.5 TRAINING

### 4.5.1 Training of reference librarians

The study aimed at establishing whether reference librarians have the necessary training needed to enable them facilitate access and use of online resources. It was established that all the reference librarians in charge of the online resources in the four universities under study have postgraduate qualifications in librarianship. Besides, all had some training in computer applications. The four had also attended various INASP/PERI workshops that they rated as very effective. The main reason

given for this rating was good delivery of content by the facilitators. In addition, three of them indicated that the training enabled them to effectively train their colleagues and library users. All of them also said they did not use online training manuals as the training received during the workshops was enough. Due to the trainings, they did not encounter any problems while searching the online databases Table 3 shows some of the INASP/PERI workshops and the number of respondents trained through each.

**Table 4.2: Attendance of INASP/PERI workshops by reference librarians**

INASP/PERI Workshop	No. of respondents attended
Introduction to using the Internet	1
Electronic journals and Electronic Resources Library Management	3
Web page design leading to library Web Page	2
ICT trouble shooting for librarians and information personnel	0
Web authoring	1
Monitoring and evaluation	1
Promotion of E-resources	1

It was evident that the only librarian who had attended the workshop on promotion of e-resources was engaged in promotional activities as posters from the database publishers were pasted on the computer room walls. Besides, the librarian requested individual users who came for training to encourage their colleagues so that they could be trained as a group. In addition, the librarian had also come up with a list of all the databases and their passwords and user identities where necessary. Users were

encouraged to make personal copies of the same in the library while some had been send to departments. All these activities had led to a high demand for the services as argued by Said (2006). Unfortunately, the library avails only six computers: two for both lecturers and Masters students and four for undergraduates. Lack of human resource has also forced the librarian to deny training to individual users without basic computer skills. The librarian also lamented the lack of support by the subject librarians who felt that marketing of the online resources was the duty of the ICT department and not a collective responsibility.

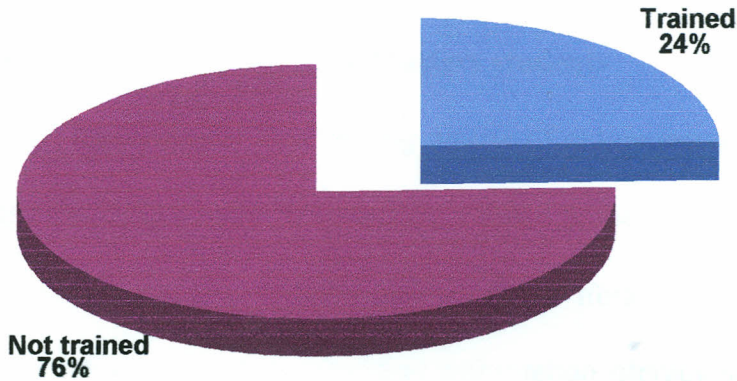
#### **4.5.2 Information literacy training for lecturers**

Librarians are supposed to impart all the users with the necessary skills and knowledge to enable them make maximum use of the online databases. The study therefore sought to establish the extent to which reference librarians were engaged in training the lecturers. When asked to state whether they have ever been trained in use of online resources, only 24% of the lecturers said they had received some training as compared to 76% who had not received any training. In one of the institutions, no training was offered to lecturers because the new university librarian had not accommodated the activities of a committee formed by the former librarian and whose responsibility was going to be to facilitate the training of trainers. The reference librarian however, indicated that most lecturers had the skills to search. In another institution, lack of training lecturers was blamed on the availability of inadequate facilities (both computers and space) that necessitated that the lecturers share these facilities with all the students in the university. As a result, lecturers

simply kept off, as they did not want people to know that they did not have computer or information searching skills. Another reference librarian said that most lecturers had alternative sources of information and did not therefore come to the library hence it was not easy to make them come for training. In the fourth institution, the reference librarian said that one-on-one training was offered to faculty and librarians during the holidays. But this view differed with those of the lecturers from the said institution, none of who indicated they had received any training facilitated by the university library. In general, out of the 24% who indicated they had received training, one mentioned having been trained abroad and only two were trained through INASP/PERI workshops while the rest mentioned having been trained by their former employers. Most of the lecturers therefore said that the online resources have impacted minimally to their work.

Lack of training of lecturers in use of the peer-reviewed online resources provided by the librarians could therefore be linked to the finding that although 64.4% of the lecturers indicated they used online resources, 73% indicated they used search engines (Google and Yahoo!); and although most lacked training in use, 62% encouraged their students to use online resources. The following chart gives a summary of the percentage of lecturers who said they had been trained and those who had not received any training in information literacy.

**Figure 4.4: Lecturers training in information literacy**



In relation to the above, the study sought to find out whether the lecturers preferred searching personally or whether they were seeking the help of library staff. Despite the high percentage of lecturers who had not undergone any information literacy training, only 8.1% indicated they sought the librarian's assistance while searching online as compared to 91.9% who engaged in personal/unmediated searching. When asked whether they encountered any problems while searching personally, 44% said they did not while 56% said they encountered problems. Most of the lecturers cited inability to log on due to unreliable information [passwords and user identification] given by their colleagues. Other problems include slow downloading speeds and access to massive information that leads to time wastage as one tries to ascertain relevant from irrelevant information. All these further stress the need for librarians as information intermediaries, to inform users of what is available, impart them with the

appropriate skills to enable use of the resources including information evaluation and continuously market and promote the resources to all the potential users.

#### **4.5.3 Information literacy training for Masters students**

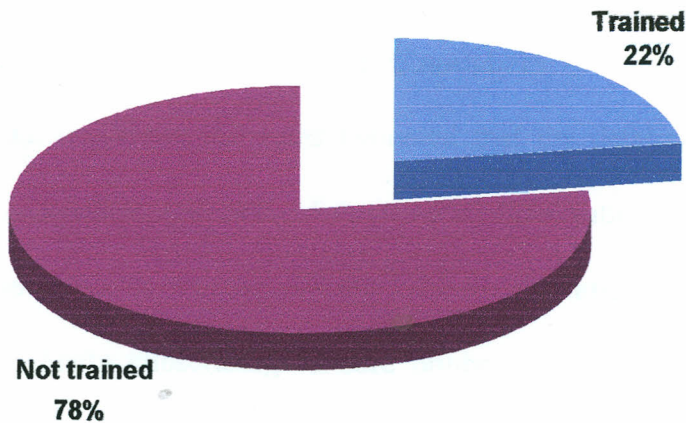
When asked if they had received any training on use of online resources, 25% of the students indicated they had, with 3.4% and 22% indicating the training was facilitated by lecturers and librarians respectively; but all the 4 librarians and 40% of the lecturers said they were engaged in imparting information literacy skills to Masters students. Two of the reference librarians stated that students did not understand the vital role that information contained in the online databases could play in their academic endeavors and were therefore not interested to go for a one on one training in the library after the initial orientation at the beginning of the academic year. In addition, the students who went for the training did not take it seriously as it was not examinable. As a result, one librarian observed that even after some basic training, most users could not retain the search strategies and could not therefore carry out effective searches on their own.

When asked about what the training entailed, all the four librarians indicated that it was basically on searching skills in the databases (utmost three) deemed relevant to the users. In one of the institutions, users who were not computer literate were not trained in the basic searching skills. The study also established that there was little, if any, collaboration between the lecturers and librarians in relation to training the students as the reference librarians said they only got involved if they were asked by

the lecturers to teach the information component of Communication Skills, a common unit only taught to undergraduates in the universities. Going by the statistics on student responses on who facilitated their training on use of online databases (3.4% lecturers and 22% librarians) it is evident that information literacy training of students in Kenyan universities is till haphazard as earlier established by Kavulya (2003).

Figure 4.5 gives a summary of students' responses on those who had received some training and those who had not.

**Figure 4.5: Students training in information literacy**



Although most students indicated that they had not received any information literacy training, the study established that 75.7% preferred carrying out personal searches and only 17.2% sought the librarians' assistance; 6.9% did neither of the above, implying they are part of those who did not use the online resources in their libraries. When

asked whether they encountered any problems while searching personally, 46.6% and 44.8 of those who responded said no and yes respectively. Just like their lecturers, most of them mentioned slow downloading speeds and having to sift through too much information as some of the problems they encountered.

Librarians should pass on to their users information searching skills acquired during their training and through experience. This will minimize or eliminate the high percentages of lecturers and Masters students who encounter problems while searching online.

## **4.6 CHALLENGES**

### **4.6.1 Challenges faced by individual KLISC members**

One of the private university librarians lamented that the databases subscribed to through KLISC did not satisfy most of their users' information needs due to their unique core religious-based courses offered in these institutions. As a result, each library was individually subscribing to core online resources. This finding is in agreement with Gairlo's(2002) claim that most widely used peer reviewed online journals are accessible to libraries through expensive bulk plans that force libraries to pay for all the resources. In so doing, the libraries add to their collections a number of rarely used journals of minimal impact and value simply because they were bundled in with the journals they could not do without.

#### **4.6.2 General challenges in relation to access and use of INASP/PERI databases**

Respondents in all the subgroups (university librarians, reference librarians, lecturers and students) required stating the major challenges that hampered access and use of the online resources in their individual universities/libraries. The following are the challenges were mentioned.

##### **4.6.2.1 Inadequate facilities versus the large number of users**

Lack of adequate computers was a major challenge in three of the institutions as shown by the high ratio of computers to users, 1:52 for ANU, 1:743 for CUEA, 1:528 for UoN and 1:3791 for KU. Besides hampering access and use, it negatively impacted on the level and type of training that could be offered to users. Most lecturers kept off their library's computer rooms as they were not comfortable sharing the same with their students. As a result of inadequate facilities, one university librarian mentioned that access to and use of the online resources has been monopolized by a few users who had the skills and whose time schedules allowed them to visit the library frequently. Users also complained of old slow computers.

##### **4.6.2.2 Inadequate space**

This was cited as one of the major problems as all students and lecturers were sharing the same computer rooms. In one of the public universities for instance, the few available computers were in a very small room that could hardly accommodate twenty computers, yet it still doubled up as the audio visual and recording room. All the

lecturers and students including the visually impaired were expected to share the room.

#### **4.6.2.3 Time limits to access online resources**

Time limits imposed by librarians on usage of a computer terminal by a user in three of the institutions are a big hindrance to use of the resources. The users felt that they needed more access time since the libraries did not provide support services like email and printing.

#### **4.6.2.4 High computer illiteracy among users**

Computer illiteracy especially among the lecturers and open-learning students was yet another problem faced by the institutions, especially the public universities. All the reference librarians shared the view that most lecturers were not willing to be trained and there is no way they could be forced to do so. A few who had the skills still preferred to use print journals. According to one of the university librarians, the university library therefore subscribes to the print titles of core journals even though the same are available online. This has pushed the library's budgetary allocation for journal subscription up at the expense of other library resources and services.

High computer illiteracy could also be linked to the opinion of one of the university librarians that the number of librarians being trained by KLISC in collaboration with INASP/PERI is so limited when compared to the number of library staff and users that need to be institutionally trained by them

#### **4.6.2.5 Poor Internet connectivity and power supply**

The respondents complained of poor Internet connectivity. The lecturers and students blamed this on reluctance by their universities to acquire modern infrastructure including computers and network them to both Local Area Network (LAN) and Wide Area Network (WAN). The librarians on the other hand blamed the Internet Service Providers (ISP) and explained that bandwidth had been improved but slow downloads were occurring at given hours especially from mid-morning when usage was high. Users explained that slow downloading speeds resulted in time wastage and frustrations given the time limits and workloads. Frequent power supply disruptions also led to frustrations as in some cases, it took so long for the computers to adjust from use of direct electricity to generators.

#### **4.6.2.6 Lack of support facilities and services**

There was a general lack of support services like printing, e-mail photocopying and downloading. Users complained of virus infested computers and the requirement that one's downloading gadget had to be formatted first as a big hindrance to use of the online resources.

#### **4.6.2.7 Lack of information professionals**

According to one of the reference librarians, the university librarians were ignoring a recommendation by KLISC that provision of online databases services should specifically have a person in charge. As a result, the librarian in charge of the online databases also had many other responsibilities and administrative duties and this

impacted negatively on the levels and quality of services they could offer. Another institution had not employed information professionals to replace those who have left for the last fifteen years and therefore provision of online databases service was sometimes entrusted to casuals. Some of the casuals had stayed in the library for more than three years without an offer of permanent employment and therefore felt overworked and frustrated.

#### **4.6.2.8 Lack of support from the university administration**

Although all the librarians acknowledged the support provided by their libraries' parent institutions in ensuring they subscribed to the online databases, some indicated that bureaucracy within the institutions delayed acquisition of some of the necessary facilities. Some university administrators were accused of not recognizing and appreciating the role of the university library especially given the fact that most publishers were only providing their products online. They were not therefore prioritizing the library when allocating budgets to various departments within the university.

#### **4.6.2.9 Lack of awareness**

There is a general lack of awareness of the availability of the INASP/PERI online databases in university libraries in Kenya. Most library users therefore heavily rely on the inadequate print resources and search engines for teaching, learning and research.

### 4.6.3 Suggested solutions

Both reference librarians and lecturers were asked to suggest solutions to the problems they thought hampered access and use of online databases. All the four librarians and 47% of the lecturers agreed that their universities should acquire more computers, connect them to the Internet and avail them for use by lecturers and students. Some of the lecturers further suggested that the universities administration should be flexible to change and adopt the use of the latest technology to improve downloading speeds.

Another suggestion by most of the lecturers was that the library users should be sensitized on availability of the online resources in their libraries. This should be followed by user training to enable the users gain the necessary skills needed in searching and retrieving information from online resources. The lecturers further explained that there was need to allocate library assistants who could assist and nurture the students and lecturers to get the know-how of information retrieval. A few of the lecturers complained of congested timetables and suggested that the issue of crash programs and teaching methods needs to be seriously addressed in order to create time for research

Other suggestions made by the lecturers include the need to organize workshops and conferences where lecturers could be informed of the most latest relevant databases available on the market; the need to address users' and librarians attitudes towards use

of online information sources and the need to provide part-time lecturers with offices within the institutions.

#### **4.7 SUSTAINABILITY OF THE PERI INITIATIVE IN KENYA**

The four university librarians were asked to give their opinion on the future of KLISC. All acknowledged that through the consortium, academic libraries' users were able to access large amounts of current information that no single university library in Kenya could afford. However, all concurred that some members of KLISC failed to pay their subscription and other dues on time, sometimes leading to long delays to get access to the online resources especially at the beginning of the year. One librarian complained of the limited number of information professionals trained by KLISC and INASP/PERI against the large number of users they are supposed to offer the complex services. Fears were expressed about what would happen in case some of the publishers participating in the initiative decided to abruptly pull out. The explanation was that if this happened, KLISC members, especially those who had cancelled subscriptions to print journals, would go through a lifespan without scholarly journals. This would force the libraries to look for backup issues that may not be available.

In relation to the above, one librarian had the opinion that the consortium should take full control of the initiative to avoid over dependence on INASP/PERI which leaves its members under the mercy of the publishers. Another suggestion was that consortium members should be required to pay for their own core journals and other

resources, and then pool funds for joint subscription to other peripheral online resources.

All the university librarians were however optimistic that KLISC was able to sustain the PERI initiative. One university librarian suggested that besides INASP/ PERI, KLISC should collaborate with organizations whose aims are to eradicate poverty in Africa. The African Institute for Capacity Development (AICAD) was mentioned as a potential partner that can help the university libraries to retrieve, store and avail for use local information that is currently languishing in lecturers' offices and other places within the universities. This suggestion implies the universities' dependency on donor funding and assistance as pointed out by Kavulya (2006).

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECCOMENDATIONS

#### 5.1 INTRODUCTION

The purpose of this study was to assess the impact of online resources accesses by academic libraries through INASP/PERI on teaching, learning and research in Kenya's universities. The study had six research questions:

- What is the status in relation to access and use of the online resources?
- Are university libraries' users aware of the availability of the online resources accessed through INASP/PERI?
- To what extent are librarians involved in teaching information literacy skills to library users?
- What methods are university libraries using to market the online resources?
- Are there any challenges faced by libraries and their users in relation to access and use of the online resources?
- Are university libraries in Kenya facing any challenges in relation to sustaining the in INASP/PERI initiative?

To answer the above questions, the study targeted lecturers, Masters students, university librarians and reference librarians in both public and private universities in Kenya. Lecturers and Masters students were chosen as they are expected to engage in research and were while university librarians and reference librarians were included because of the vital roles they play in information production' access and use. This chapter therefore presents a summary of the findings.

## 5.2 SUMMARY OF THE FINDINGS

University libraries in Kenya were providing online resources to their users through the PERI initiative but this has not had a big impact on teaching, learning and research activities in the universities under study. This is because the universities were not providing their users with adequate facilities to enable efficient and effective use. Due to the available limited resources, the libraries are limiting the time a user can take on a computer terminal in an effort to provide access to many users. In addition to this, some libraries are not giving their users the passwords and user identities of the databases whose access requires log on. As a result, lecturers and Masters students are missing out on the use of authoritative, current and peer-reviewed academic information as they rely mostly on print resources and search engines to satisfy their information needs. Lack of space has led to a situation where all users share the same computer rooms making lecturers to keep off from using the online resources.

The study also revealed that most lecturers and Masters students were aware of the availability of online information resources in their local libraries. This did not however translate into high awareness levels of the availability of online databases accessed through INASP/PERI because most users could not mention any of them. They associated online resources with only search engines with Google and Yahoo! dominating the list of online information sources searched most.

Libraries are not putting any emphasis on marketing and promotion of the online resources. Library guides were mentioned as the method through which most users

were made aware of availability of online resources in their libraries. Most libraries had library websites although some users complained of their websites being complicated or not frequently updated.

Librarians in the four universities were not collaborating in offering comprehensive information literacy training to their libraries' users. According to the study's findings, there was still no formal collaboration between librarians and lecturers in imparting information literacy skills to students. The teaching of Communication Skills is under the lecturers with librarians waiting to be called upon to teach its library component when need arises. On the other hand, librarians in charge of the online resources are imparting willing library users with information searching and retrieval skills; and their efforts are limited due to inadequate facilities and human resource. This has for instance led to a decision by some of the librarians not to offer information searching and retrieval skills to users without basic computer skills.

All the four reference librarians had attended at least one INASP/PERI workshop. However, from other related findings of this study, it can be deduced that they did not use the acquired skills either because the skills were needed in different departments manned by other professionals; they were not supported to apply them in their departments; or they did not have the initiative to apply them. The study also revealed that access and use of the online resources accessed through the INASP /PERI initiative by university library users is limited due to various challenges. The major

challenges include lack of adequate computers and space versus the ever increasing number of users; inability of the resources to cater for the needs of users in private academic institutions for instance, those whose core areas of study is religion; failure by librarians to inform users of the availability of these resources; lack of adequate professional staff; and insufficient bandwidth.

This study also established that university librarians were concerned about how the libraries would cope in the eventuality that some publishers decided to pull out of the PERI programme. Some of them shared the opinion that KLISC should collaborate with other initiatives in the country whose aim is to eradicate poverty for example AICAD. Through such collaborations, academic libraries should develop repositories of local information that is currently languishing in lecturers' offices and other places within the universities. This would reduce over-reliance on the expensive foreign-based information.

### **5.3 CONCLUSIONS OF THE FINDINGS**

From the above findings, this study concludes that although universities in Kenya are paying a lot of money to access online resources through the INASP/PERI initiative, their availability in university libraries has not had any major impact on the core activities of these universities: teaching, learning and research. Both lecturers and Masters students for instance still rely on print resources for authoritative and background information and search engines for current information. This implies that the academic community in Kenya is still limited in relation to the amount of

information it can access and use for teaching, learning and research purposes. This is because some of these academic libraries are not also providing adequate book titles to their users (PUIB, 2007). The implication is that the academic community is not realizing quality research, effective teaching and learning as a result of using information in the online databases. The contribution of the country's researchers to the local and global pool of knowledge is therefore still limited.

In order to enable the academic library users to reap maximum benefits from the INASP/PERI initiative as per its objectives, there is need for university libraries and their parent institutions to urgently address the reasons behind minimal use of the online resources.

#### **5.4 RECOMMENDATIONS**

In view of the above findings and conclusion, the researcher makes the following recommendations:

1. Universities in Kenya should embrace modern technology if they have to realize any returns (in terms of quality research, teaching and learning) on the large sums of money being spent on subscriptions to the INASP/PERI databases. University librarians should make the Vice Chancellors to understand that provision of funds for subscription should be accompanied with provision of the necessary access facilities including computer hardware and software, sufficient bandwidth, reliable power supply and adequate space.

Separate computer rooms should be provided for lecturers, postgraduate and undergraduate students.

2. University administrations should provide the necessary moral and financial support needed by the libraries; and where this exists, the university and reference librarians should be proactive and engage in vigorous marketing and promotion of the online databases
3. KLISC should identify and train Trainers of Trainers (ToTs) who should then go to each of the universities to train other librarians, researchers and lecturers from within their institutions. The librarians and lecturers should collaborate and come up with an integrated information literacy programme. They should jointly teach it to students at all levels of study. Students should be assessed and awarded marks in their areas of study on the basis of use of relevant information from varied information sources including print, academic online databases and search engines in their assignments as all these have relevant information and therefore complement each other.
4. The publishers participating in the PERI initiative should be compelled to frequently provide KLISC members with institutional database usage statistics. This would help in making decisions on future subscriptions.

5. The publishers should also agree with KLISC on future access to their databases in the event of their withdrawal from the initiative.
6. Private universities should pool financial resources and jointly subscribe to specialist online information resources not covered by KLISC.
7. Local universities should invest more in research. Academic researchers should be encouraged to avail their research findings to their university libraries to enable wide access by other researchers and students. This should, in the long run, lead to production and availability of local content whose findings can be used to solve local problems. Over reliance on expensive information based on foreign research can be minimized if all the stakeholders play their roles well.
8. All the country's major stakeholders: the government through the relevant ministries (Education, Science and Technology, Planning), the Commission for Higher Education (CHE) and KLISC should borrow a leaf from Pakistan which has turned the INASP/PERI initiative into a national success story.

### **5.5 Areas for further study**

The researcher suggests the following as potential areas for further research:

1. A comprehensive survey of all the universities and other institutions currently accessing the INASP/PERI databases.

2. Kenya's academic librarians' attitudes towards provision of online databases by university libraries.

3. Provision of online information to the hearing and visually impaired academic library users.

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## APPENDICES

### APPENDIX 1

#### Glossary

**Bandwidth:** In computer networks, bandwidth is often used as a synonym for data transfer rate - the amount of data that can be carried from one point to another in a given time period (usually a second)

**Gross Domestic Products (GDP):** The CDP of a country is defined as the market value of all final goods and services produced within a country in a given period of time. It is also considered the sum of value added at every stage of production of all final goods and services produced within a country in a given period of time.

**Human Development Index (HDI):** Is a comparative measure of life expectancy, literacy, education and standard of living for country worldwide. It is used to determine whether a country is developed, developing or undeveloped.

**Internet:** Is a global network connecting millions of computers all over the world.

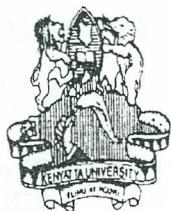
**Internet Protocol (IP):** Is a method or a protocol by which data is sent from one computer to another in the internet. Each computer known as a host on the Internet has at least one IP address that uniquely identifies it from all other computers in the Internet.

**Internet Services Provider (ISP):** Also called Internet Access Provider (IAP), is a business organization that provides to consumers access to the Internet and related services.

**Local Area Network (LAN):** Is a computer network covering a small geographical area like home, office or group of buildings.

**Wide Area Network:** Is a computer network that covers a broad area, that is, any network whose communications link across metropolitan, region or national boundary.

**APPENDIX 2**



**KENYATTA UNIVERSITY  
LIBRARY STUDIES DEPARTMENT**

P.O. Box 43844, 00100  
**NAIROBI**  
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Ext. 57414  
Fax: 254-02-811575  
Website: [www.ku.ac.ke](http://www.ku.ac.ke)

11<sup>th</sup> April 2007

TO WHOM IT MAY CONCERN

AMUNGA A. HELLEN REG. NO. E55/12556/04

This is to confirm that AMUNGA A. HELLEN REG. NO. E55/12556/04 is a student in our M.Ed (Library Studies) programme and currently undertaking her research work.

Any assistance given to her will be greatly appreciated.



DR. P.G. MWATHI  
CHAIRMAN, LIBRARY STUDIES DEPARTMENT

PGM/enm

APPENDIX 3



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A.

Office of the Vice-Rector/Deputy Vice-Chancellor  
ACADEMIC AFFAIRS

P.O. Box 62157, 00200  
Nairobi, KENYA  
Telephone: 254-891601-6  
Fax: 254-20-891261  
E-mail: academics@cuea.edu

Ref: PO/cwn/106/2007

Ref: \_\_\_\_\_

1<sup>st</sup> April 2007

Wangari Munga A. Hellen  
Reg. No. E55/12556/04  
Kenya Catholic University  
P.O. Box 43844 - 00100  
NAIROBI

Dear Madam,

**Ref. Request to Conduct Research**

Reference is made to your request to conduct research at the Catholic University of Eastern Africa for your M.Ed. (Library Studies).

I am glad to inform you that your request has been accepted and you have been granted permission to conduct research in this University.

Yours faithfully,

*Paul A. Ogula*

**Prof. Paul A. Ogula**  
**Vice-Rector/Academic**



*Personal Officer  
Please provide  
the names  
of teaching  
staff in the  
University  
12/1/07*

## APPENDIX 4

### LIST OF KLISC MEMBERS – 2007

#### Public Universities

1. University of Nairobi
2. Jomo Kenyatta University of Agriculture and Technology (JKUAT)
3. Kenyatta University
4. Maseno University
5. Egerton University
6. Moi University Library
7. Masinde Muliro University

#### Private Universities

8. United States International University (USIU)
9. Daystar University
10. Strathmore University
11. Catholic University of Eastern Africa (CUEA)
12. African Nazarene University
13. Kabarak University
14. University of Eastern Africa, Baraton
15. Kenya Methodist University (KEMU)
16. Agakhan University

#### Non-University Institutions

17. Commission for Higher Education (CHE)
18. ICIPE
19. ILRI
20. Kenya Agricultural Research Institute (KARI)
21. Kenya School of Professional Studies (KSPS)
22. Kenya College of Accountancy (KCA)
23. Kenya Institute of Management (KIM)
24. World Agro-forestry (Former ICRAF)
25. African Population and Research Center (APRC)
26. National Defense College (NDC)

27. African Medical Research Foundation (AMREF)
28. Kenya National Library Services (KNLS)
29. Kenya Medical Research Institute (KEMRI)
30. Kenya Forestry Research Institute (KEFRI)
31. Nairobi Evangelical Graduate School of Theology (NEGST)
32. Institute Fraçais De rech
33. Presbyterian Church of East Africa Pastoral Institute (PCEA)
34. Kenya College of Communication Technology (KCCT)
35. Tropical Institute of Community Health and Development – Africa (TICH-A)
36. Pan Africa Christian Center
37. St. Paul Theological College
38. Central Bank of Kenya
39. Australian Studies Institute (AUSI)

**Source: KLISC, 2007**

#### BACKGROUND INFORMATION

a. Name of institution

b. Department

#### ACCESS AND USE OF ONLINE DATABASES

Which information resources do you consult first when you need information?

( ) Print resources

( ) Online resources

( ) Search engines (Yahoo/Google)

a. (i) Are you aware of the following database?

( ) Yes ( ) No

If yes, which one?

b. How did you get to know about it?

Through \_\_\_\_\_

## APPENDIX 5

### QUESTIONNAIRE FOR MASTERS STUDENTS

#### PURPOSE AND CONFIDENTIALITY NOTE

This questionnaire is to assist a student doing a Masters degree in Library and Information Science to collect data on the impact of online databases on research, teaching and learning in both public and private universities in Kenya. You have been selected to participate in the survey. You are kindly requested to respond to the questions with honesty. The responses you give will be treated with utmost confidentiality and will be used for academic purposes only. Your cooperation will be highly appreciated.

#### INSTRUCTIONS

- ❖ Tick appropriately in the brackets ( ) or fill the spaces provided.
- ❖ Feel free to give any other relevant information not catered for in the questionnaire.

#### BACKGROUND INFORMATION

- a. Name university
- b. Department

#### ACCESS AND USE OF ONLINE DATABASES

2. Which information resources do you consult first when given any assignment?

- print resources
- Online resources
- Search engines ( yahoo!/Google) Specify

3. a.(i) Are you aware of the any online database in your university library? ( )Yes ( ) No

If yes, which ones?-----

b. How did you get to know about them?

- Through:
- Brochures
  - Library guides
  - E-mail alerts
  - Library website
  - Library orientation
  - Information literacy training

Any other, please specify-----

c. Do you use any of the online databases?  Yes  No

d. How do you carry out the information searching?

Personally  I request the librarian to do the search  N/A

e. Do you encounter any problems when you are searching online databases?

Yes  No  N/A

If yes, specify-----

4. a. Have you undergone any training on how to use online databases since you joined university?

Yes  No

b. Who facilitated the training?

Lecturers  Librarians  lecturers and librarians  N/A

5. a. (i) Do you have passwords and user identities of the online databases?  Yes  No

(ii) If yes, do you share them with your friends?  Yes  No

b. Does the university library have a policy on access and use of online databases?

that you are aware of?  Yes  No

c. (i) Does your department have computers?  Yes  No

(ii) If yes, can you access the online databases provided by the university library from your department?  Yes  No

(iii) Besides the library and /or the departmental computer laboratories, where else do you have access to databases? (Tick as many as appropriate)

Cyber cafés

At home

In the office

Others, please specify-----

6. Highlight the major challenges, if any, that you think hamper your effective access and use of online information in your university.-----

-----  
-----  
-----  
-----  
-----

You are requested to respond to the questions with answers treated with utmost confidentiality and will be used for research purposes. Your cooperation will be highly appreciated.

### INSTRUCTIONS

- \* Tick appropriately in the brackets ( ) or fill the spaces provided
- \* Do not write anything on the reverse side of the sheet which is not covered for

### BACKGROUND

- a. Name of the library
- b. Department

### ACCESS AND USE OF ONLINE DATABASES

- a. What types of information sources do you use most when you are online?
  - ( ) Print (e.g. books, conference proceedings, journals)
  - ( ) Online (e.g. journals, books, full-text articles)
  - ( ) Search engines (e.g. Google, Yahoo)
  - ( ) CD-ROMs
  - ( ) Any other, please specify \_\_\_\_\_
- b. Briefly explain your preference in (a) above.

THANK YOU

**APPENDIX 6**  
**QUESTIONNAIRE FOR LECTURERS**

**PURPOSE AND CONFIDENTIALITY NOTE**

This questionnaire is to assist a student doing a Masters degree in Library and Information Science to collect data on the impact of online databases on research, teaching and learning in both public and private universities in Kenya. You have been selected to participate in the survey. You are requested to respond to the questions with honesty. The responses you give will be treated with utmost confidentiality and will be used for academic purposes only. Your cooperation will be highly appreciated.

**INSTRUCTIONS**

- ❖ Tick appropriately in the brackets ( ) or fill the spaces provided.
- ❖ Feel free to give any other relevant information to the research, which is not catered for in the questionnaire.

**BACKGROUND INFORMATION**

1. a. Name of the University
- b. Department

**ACCESS AND USE OF ONLINE DATABASES**

2. a. What types of information sources do you use most when doing your research?
  - ( ) Print (e.g. books, conference proceedings, journals etc)
  - ( ) Online (e.g. journals, books, full-texts etc)
  - ( ) Search engines (e.g. Google, Yahoo)
  - ( ) CD-ROMs
  - ( ) Any other, please specify

b. Briefly explain your preference in (2) above-----  
-----  
-----

3. a. (i) Does your library provide journals through online databases? ( ) yes ( ) No
- (ii) If yes, how did you get to know about them?
  - Through: ( ) Brochures
  - ( ) Library guides

- E-mail alerts
- Library website
- Orientation
- Information literacy training

Any other (specify)-----

b. Name some of the online databases that you use

c. Have you ever been consulted about which online databases should be acquired in your area of specialization?  Yes  No

4.a. (i). Have you undergone any training in the use of online databases?  yes  No

(i) If yes, who facilitated the training? (ii) When were you trained?

2000  2001  2003  2004  2005  2006  2007

Any other, (specify) -----

b. (i) Have you ever attended any of the INASP/PERI sponsored workshops, seminars or conferences?  Yes  No

(ii) If yes, please indicate the year when the training took place

2000  2001  2003  2004  2005  2006  2007

c. Have you been given the passwords and user identities of the databases relevant to your subject areas?

Yes  No

d.(i) Who normally does the information searching and retrieval for you?

Personally

The librarian

Any other (specify)

(ii) If personally, state some of the problems that you encounter during the searching process-----

-----

-----

e. Does the university library have a policy on access and use of online databases?

Yes  No

5. a. Do you encourage your Masters students to use online resources ( ) Yes ( ) No  
 b. Are you involved in imparting information literacy or Communication Skills to your students? ( )Yes ( ) No
6. a. Does your department have computers? ( ) Yes ( ) No  
 b. Can you access the online databases from your department? ( ) Yes ( ) No  
 c. Besides the library and/or departmental computers, where else are you able to access the online databases?  
 ( ) office  
 ( ) home  
 ( ) Cyber Cafés  
 ( ) Any other (specify)

7. In your opinion, how has the availability of online databases in your university library impacted on your work?-----  
 -----  
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8. a. In your opinion, what factors do you think hamper effective access and use of online resources by the academic community in your university-----  
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**THANK YOU**

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## APPENDIX 7

### INTERVIEW QUESTIONS FOR REFERENCE LIBRARIANS

#### BACKGROUND INFORMATION

- 1a. Name of the University
- b. Title of respondent
- c. Educational background
  - Certificate
  - Diploma
  - Bachelors
  - Post-graduate
- d. Professional experience in the capacity of a reference librarian
  - less than 1 year
  - 1 – 5 years
  - 5 – 10 years
  - More than 10 years

#### TRAINING IN USE OF INASP/PERI ONLINE DATABASE

2. a). Have you undergone any formal computer training?
- b. Have you ever attended any of following INASP/PERI workshops?
  - Introduction to using the Internet
  - Electronic Journals and Electronic Resources Library Management
  - Web-Page Design leading to Library Web Page
  - ICT trouble-shooting for librarians and information personnel
- c. i) How would you rate the training/workshops?
  - Very effective
  - Effective
  - Moderate
  - Ineffective
  - Very ineffective
- d Do you make use of the online training manuals provided by INASP/PERI?

### CURRENT STATUS OF THE LIBRARY IN RELATION TO ACCESS AND US

3 Give your opinions on the current status of the following in relation to access and use of online databases:

- i) Internet connectivity/bandwidth
- ii) Downloading speed
- ii) Electricity supply

4. Do you give all the lecturers and Masters students passwords and user identities to all the databases in their areas of specialization?

Briefly explain your answer

5. Do you have any access policy in relation to access and use of online databases?

6. Do you encounter any problems while searching the online databases?

7. Besides providing access to the online databases, which of the following services do you offer Lecturers and Masters Students?

Service	Lecturers	Master students
E-mail		
Printing		
Photocopying		

### MARKETING AND AWARENESS SPREADING

8. (i) Do you market your online databases?

(ii) If so, which method(s) do you use to market/spread awareness of the availability of the INASP/PERI databases in your library?

- Posters
- Brochures
- library guides
- Library website
- E-mail alerts
- Pamphlets
- During training sessions
- During the orientation period

## INFORMATION LITERACY TRAINING

9. a. (i) Do you train lecturers in online information access and retrieval?  
(ii) What does it entail?
- b. (i) Do you offer information literacy training to Masters students?  
(ii) What does it entail?  
(iii) When is the training done?  
(iv) Do you collaborate with lecturers in training the students?

## CHALLENGES

10. a. (i) Are there any challenges associated with access and use of the INASP/PERI database in your library?  
(ii) What are the major challenges?

## APPENDIX 8

### INTERVIEW QUESTIONS FOR UNIVERSITY LIBRARIANS

1. a. What is the current student population of your university?
- b. Of the above, how many are Masters students?
- c. How many lecturers are registered members of the main university library?
2. a. When did your university join KLISC?
- b. How many computers can both Masters students and lecturers use to access the INASP/PERI online databases?
3. How has been the support of the university administration to the library in relation to implementing the PERI programme?
4. Are there any problem that your library faces as a result of being a member of KLISC?
5. What is your opinion on the future of KLISC?

## APPENDIX 9

### LIST OF UNIVERSITIES AUTHORISED BY CHE TO OPERATE IN KENYA

#### Public universities

1. Egerton University
2. Jomo Kenyatta University of Agriculture and Technology
3. Kenyatta University
4. Maseno University
5. Masinde Muliro University of Science and Technology
6. Moi University
7. University of Nairobi

#### Private Universities: Chartered

8. Africa Nazarene University
9. Catholic University of Eastern Africa
10. Daystar University
11. Kenya Methodist University
12. Scott Theological College
13. St. Paul's University
14. University of Eastern Africa, Baraton
15. United States International University-Africa

#### Universities with Letters of Interim Authority

16. Aga Khan University
17. Great Lakes University of Kisumu
18. Gretsia University
19. Kabarak University
20. KCA University
21. Kiriri Women's University of Science
22. Strathmore University
23. The Presbyterian University of East Africa

*Source: CHE, 2007*