



JIMMA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF INFORMATION SCIENCE

**ASSESSMENT OF ELECTRONIC RESOURCE MANAGEMENT ON
SERVICE DELIVERY IN SELECTED ETHIOPIAN ACADEMIC
LIBRARIES**

BY ZEBIBA KEDIR

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**Assessment of Electronic Resource Management on Service Delivery in
Selected Ethiopian Academic Libraries**

By

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Digital Resource Management.**

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ABBREVIATIONS AND ACRONYMS

AAU: - Addis Ababa University
AGORA: - Access to Global Online Research in Agriculture
ASTU: - Adama Science and Technology University
AVP: - Academic Vice President
CD: - Compact disc
CD-ROM:- Compact Disc Read-Only Memory
DL: - Digital Library
DLF:-Digital Library Federation
DVD: - Digital Versatile Disc
ER: - Electronics Resource
ERM: - Electronics Resources Management
ERMS:-Electronic Resource Management System
ICT: - Information and Communication Technology
ILS: - Integrated Library System
INASP: - International Network for the Availability of Scientific Publications
IT: - Information Technology
JU: - Jimma University
LIS: - Learning Information Services
LRC:-Learning Resource Center
MOE: - Ministry of Education
MOST;- Ministry of Science and Technology
NAAC: - National Assessment and Accreditation Council
NISO: - National Information Standards Organization
OPAC:-Online Public Access Catalogue
PERI: - Program for Enhancement of Research Information
WWW: - World Wide Web

ABSTRACT

The future development and success of academic libraries depends greatly on how they hold technology in their operations mainly in the management of electronic resources. The main aim of this study was to assess Electronic Resources Management on Service Delivery in Ethiopian academic Libraries. The methodology employed to conduct this study was cross sectional survey research and the respondents' drawn from Addis Ababa, Adama Science and Technology and Jimma University librarians. Purposive sampling method was used to select samples from study population, study areas and samples for interview. Data for the study was collected through questionnaire, face-to-face interview and observation. The available e-resources in different universities in Ethiopia were similar in feature, purpose and objectives but differently managed in academic libraries. The main results of the research show that the availability of electronic resource management standard, budget, instruction or comprehensive guide and proper channel to make users aware needs great attention. The majority of the respondents indicated that the factor that affect e-resource management on service delivery of e-resources is the absence of e-resource management standards with $M= 3.52$, $SD= 1.562$. The ways to manage electronic resources and services to the end users vary from the past practices. To meet the end-users need, the academic libraries need to identify and adopt good management practices. Thus, preparing guidelines in a standardized way based on the best practices employed by libraries is significant which will ultimately enhance the value based services of academic libraries.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The application of Information and Communication Technology (ICT) in academic libraries has brought great change to the library as a service institution (Oduwale, 2005). ICT adoption has led to a better way in which librarians performed their duties on daily basis. Oyedun (2007) stated that electronic resources as facilities assisted the librarians to offer quick, adequate and efficient services to their client. It also helps them to meet the diverse needs of their patrons.

Therefore, the utilization of Electronic Resources(ER) in academic library in a given country assists the librarians in performing a dual role: one to the patrons towards their information needs in the school, while the second is manifested in the daily routine work within the library environment, where librarians works as seen in the two service units readers services and technical sections of the library. The services of librarians utilizing ERs is manifested in the services they offered within the sections of the library such as acquisition section, cataloguing unit, serial services, reference and bibliographic services, current awareness services, on-line public access catalogue, and records units (Gaudencio and Mercado,2013).

All these services have been given a great improvement by applying the facilities of ICT to the daily functions of the librarians in the library. The most prominent ER facilities in academic institution are internet. Looking at the internet as learning resources as cited by Oketunji (2004), Odunewu and Omagbemi (2008) stated that this resource add value to the services that the librarians offer for the students and staff within the academic community where the library are found.

Electronic library is used to refer to a library where some or all of the holdings are available in electronic form. The services of the library made available electronically over the internet: users can access them remotely. However electronic libraries are not created simply. Various stages along the road towards developing an e- library can be identified. Information held in electronic format listing the contents of a discreet collection; developing an electronic catalogue of materials and networking the catalogue goes a step. Offering full electronic text of journals and books on CD or online marks a further stage. Then there is the digitization of locally produced

information and the establishment of institutional repositories. Perhaps most important is the value added to purchased resources by the library to optimize their use: training for staff and students in information literacy; development of 'middleware' to enable seamless searching and access to information; partnerships with academic departments in delivering e-resources in flexible learning environments; developing e-services that meet user needs. For many, the endgame is one where academic staff and students can interact electronically with the libraries and ultimately the world's scholarly content without actually visiting the library. In practice few libraries have reached this status and most are at some intermediate stage (Gani and Magoi, 2014).

Library and Information Services of academic libraries play a central role in enhancing the quality of academic and research environment. The National Accreditation and Assessment Council (NAAC) strive for quality and excellence in higher education and advocates for enhancing the role of Library and Information Services (LIS) in improving academic environment. Though, it is institutional accreditation that the NAAC does, the assessment of a library, a vital sub-unit, is a key step that integrates itself with the overall evaluation. Library is the fulcrum of support for the entire range of academic activities on an educational campus. In today's high-teaching learning environment, the library as a learning resource is taking up increasingly more academic space and time in the life of a learner. Thus NAAC has decided to identify the set of best practices in LIS, with the help of a few case presentations from few selected libraries of the accredited universities and colleges. This is a great initiative in promoting the libraries in identifying and sharing best practices that can be adopted in the academic environment. Best practice may be innovative and be a philosophy, policy, strategy, program, process or practice that solves a problem or create new opportunities and positively impact on organizations. Institutional excellence is the aggregate of the best practices followed in different areas of institutional activities. In general, the use of technology and innovative ideas lead to evolve best practices in electronic library and information environment of higher academic institutions in a given country (Lokalwar and Kapade, 2012).

An enormous progress has been made in ensuring that staff and students in universities in Africa can access the growing quantities of information resources now produced in electronic format. Support has been provided in setting up the necessary networked infrastructure and providing the

requisite hardware and software. Negotiation with publishers has resulted in journals and databases being made available free or at heavily discounted prices through programs like AGORA, EIFL, HINARI and PERI, and much training have taken place (Salanje, 2011).

Despite all the plethora of actions and projects, it is difficult to obtain a good overview of the status of electronic and digital initiatives in African higher education. Such evidence suggests that progress made by libraries is very uneven, both between and within countries. Some university libraries have embraced the new mediums and made them available to users, others do not have the necessary infrastructure to access those e-resources now available on countrywide licenses. Some libraries are fully automated; others remain manually organized. Libraries which automated some years ago have not been able to migrate or upgrade to new systems, so offer only limited services. Those libraries that have advanced down the digital road do not yet appear to have explored user needs in the digital world and the possibilities of a more dynamic interaction with ICTs (Salanje, 2011).

Ethiopia is one of the countries participating in PERI and access to various e- journals, scholarly databases and practicing to form digital library (DL) since 2003. A series of training workshops were provided to librarians, information workers and researchers after they had subscribed to these resources. There are currently about thirty PERI-participating institutions in different regions of Ethiopia, mainly universities and colleges, research institutions, and other government bodies. Addis Ababa University (AAU) is the co-coordinating institution for Ethiopia and has been undertaking various activities in order to implement the programs throughout the country. In 2004, International Network for the Availability of Scientific Publications (INASP) commissioned a survey of university libraries in English-speaking Africa. It aimed to provide an overview of the progress made in establishing DL, and identify where and what support is required (Rosenberg, 2008).

The findings of NAAC stated that, well organized libraries are a critical part of every university research and teaching center. But, as numerous accounts have documented, many Ethiopian academic libraries have struggled to maintain good collections for several reasons (NAAC, 2010- 2011).

1.2. Statements of the Problem

Electronic resource management provides the context for what many librarians find to be a discouraging, complex and multidimensional challenge. In an earlier study of Digital Library Federation (DLF) member library practices; Jewell (2001) identified some important trends in how libraries selected and acquired licensed electronic resources and delivered information to users. Most of these libraries had found their existing Integrated Library Systems (ILSs) incapable of supporting these functions, and begun to design local automated tools to fill these serious gaps. One fundamental management problem that some of these systems were meant to address is the need to describe larger numbers of bibliographic databases, and deliver that information to users (Jewell ,2001).

Proliferation of digital products and changing modes of access have made managing electronic resources a complicated and difficult task integrated with the overwhelming growth of demanding users. As the e-resources continue to grow exponentially, libraries started to face problems of sustaining adequate staffing levels and constant change in resources and budget issues. Graham and Macadam, (2004) found from their study that most of the challenges in response to managing of electronic resources occurred in all section of libraries. The electronic resource management (ERM) landscape and specific techniques for managing, accessing, and cataloguing online information with ease need attention. Maintenance of Uniform Resource Locator (URL), cataloguing and communication challenges (with vendors, users and colleagues) as well as those of licensing and integrating processing of electronic resources into existing organizational structure are some problems librarians' have to contend (Graham and Macadam, 2004).

The value of a library, especially electronic resources, could be determined by the extent of accessibility and utilization of its resources. Literatures showed that there are different studies done on the issue; some are undertaken at continental level where as others are undertaken at national and regional context. Boakye (1994) explained the academic libraries of developing countries and services have changed due to the information technology (IT) appearance in the educational system. Moreover, Rosenberg (1998) stated that the lack of funding for libraries in African universities is a permanent headache and even after attempts to revitalize the higher

education sector in Africa university library collection development, and especially journal subscriptions, had been neglected.

Kumar and Singh (2009) described that, the advancement of ICT has ensured the application of internet and ERs (CD-ROM, DVD-ROM) in the learning resource centre (LRC). The authors stressed on the competencies of LRC staff to handle the problems associated with delivery of e-resources. The above views also supported by Bansode, et al. (2009) and viewed that ICTs have allowed traditional learning information system (LIS) methods to be replaced by the newer, faster, and more accurate ways of transmitting information. In view of the enormous resources involved in the development and maintenance of e-resources, it is necessary good to manage resources effectively as to meet the objective. A library, with large volumes of information resources, both physical and electronic, that cannot be accessed or effectively utilized through a better management system is meaningless.

Library decision makers determine how to meet new and evolving expectations for library services and materials. Clearly, libraries are working from vastly different assumptions about the ways in which they might carry out their responsibilities better than they did a few years ago. While library practice is changing, it remains consistent in its commitment to service. Collections of books and other information resources without accompanying access tools, instruction, or other library services are mere warehouses, not libraries. Librarians in all types of libraries work to ensure that their organizations provide good service in support of the goals of the library's (Miller,2008).

In October 2004, there was a meeting at which research on an evaluation of PERI resources and services in Ethiopian academic institutes was presented. However, it was evident that it was not exhaustive in terms of target groups, methodology and in the way usage statistics had been analyzed. No national survey has been conducted to measure the management of ERs or to assess factors that influence their use. Very little is known about how the resources are used, who uses them, what barriers might hinder their use, and what the overall impact of the service is. The study conducted by Aynalem and Wondimeneh (2008) aimed to explore the usage, relevance, impact and barriers to the use of PERI resources in higher learning institutions in Ethiopia.

In the era of digital libraries, library users pay more attention to electronic journals, electronic databases and electronic books (Rupesh and Gaurav., 2011). So, it is difficult to meet users' information need without proper management to deliver services. Popoola (2008) also indicated that the quality of teaching, research, and community services of any academic institutions depends on information sources and services. Information availability, accessibility, and use are essential to the teaching, learning and research activities. Library is actively exploiting IT and delivering information to users in digital form. Ongoing, core functions such as selection decisions, providing access to information, delivery of services to users and the preservation of library collections are increasingly influenced by management of such resources. Identifying new ways to conceive good services are current challenges for libraries. In the library, good service may be recognized by the customers in terms of prompt service delivery or error free services. Librarians have shifted their perspective of library services to represent a user view. The primary goal of any library is to maximize user satisfaction and to potentially exceed the expectations of their users. In order to do so effectively managing a resource is an initial point for good delivery of services (Popoola,2008).

The researcher assumes therefore, that one of the challenges for the Ethiopian academic libraries is the changing format of the resources, which are found in electronic or hard copies. This also, goes to attest on how these resources are to be safeguarded and managed in the forms they appear in the academic libraries. However, the question was to what extent are academic libraries in Ethiopia been able to manage the electronic resources as found in their libraries and provide service delivery to its users. Hence, this study is expected to “Assess the electronic resource management on service delivery in selected Ethiopian academic libraries that include Addis Ababa University library, Adama Science and Technology University library and Jimma University library system. To this end, this study attempted to answer the following research questions:

1.3. Research questions

1. How are the electronic resources managed in Ethiopian academic libraries that include Addis Ababa, Adama Science and Technology and Jimma universities?
2. Are the service deliveries of the selected academic libraries affected by the electronic resources management at the individual libraries?
3. Is there any difference in the service delivery amongst the selected academic libraries based on the electronic resource management?
4. Is there any relationship between electronic resources management and service delivery in the selected Ethiopian academic libraries?
5. What are the factors that caused the difference in the electronic resources management on service delivery in Ethiopian academic libraries (Addis Ababa, Adama Science and Technology and Jimma universities)?

1.4. Objective of the Study

1.4.1. General Objective of the Study

The general objective of the study was assessing Electronic Resource Management on services delivery in Ethiopian Academic Libraries in Addis Ababa, Adama Science and Technology and Jimma universities).

1.4.2. Specific objectives of the Study

The specific objectives of the study were to:

1. Determine how electronic resources are managed in Ethiopian academic libraries that include Addis Ababa, Adama Science and Technology and Jimma universities
2. Identify whether the service deliveries of Addis Ababa University, ASTU and Jimma University libraries are affected by the electronic resources management
3. Find out the difference in the service delivery amongst the selected academic libraries based on the electronic resources management.
4. Identify the relationship between electronic resources management and service delivery in the Addis Ababa University, ASTU and Jimma University libraries.
5. Find out the factors that caused the difference in the electronic resource management on service delivery of Addis Ababa, Adama Science and Technology and Jimma universities library.

1.5. Significance of the study

This study endeavors to examine the management of e-resources on service delivery in libraries. Hence, the results of this study would use for librarians, library administrates; policy-makers, universities, educational sectors and other concerned bodies to improve management of e-resource services. Moreover, the result of the study would be very useful to allow librarians and other decision- makers to investigate the standard and techniques of managing e-resources for better services. With good ERM libraries effectively manage and deliver electronic holdings in organized manner as to satisfy the users.

The study will be used as an input for ongoing research activities in the area. The study would also enable libraries to make regular assessments to enhance the improvements of the library service and enable academic libraries to develop policies and strategies to support and guide the management of electronic resources. Additionally, the study will enable libraries to train their staffs on electronic resources management.

1.6. Scope and limitation of the Study

The study focused on exploring ERM on service delivery in three selected Ethiopian academic libraries (AAU, ASTU & JU) libraries. The selection was based on their having well-established libraries, geographical locations, and also, the existence of ICT infrastructure and short run time to conduct survey since access of transportation is easy because of their geographical location. The study was employed cross –section research design, purposive and simple random sampling techniques and for data collection questionnaire, interview and observation were selected. In addition, the study was focus only on assessing Electronic Resource Management on service delivery.

1.7. Organization of the study

The study has been organized in five chapters. The first chapter consisted of the introduction part including background of the study, statement of the problem, objectives of the study, significance of the study, scope of the study, limitation of the study, organization of the study and operational definition of terms. Chapter two deal with the review of related literature. The third chapter discusses about research design and methodology including design of the study, sources of data, samples and sampling procedures. Chapter four presented data analysis and presentation based on the findings of the study. The last chapter forwarded conclusions, and recommendations. Finally appendices and references at the last part of the study report.

1.8. Operational Definition of Terms

Academic Libraries- refers to libraries in higher institutions to disseminate information, store information for the use of users.

Delivery - The process of providing access to a resource; in libraries, delivery of materials may be done via internet (proxy servers, link servers, ILL).

Electronic Resources- Electronic information materials/resources and services that users access electronically via a computing network from inside the library or remote to the library

ERM: The practices and software systems used by libraries to keep track of important electronic information resources, especially internet based resources such as electronic journals, databases and electronic books.

ERMS:- A library system which enables the storage, retrieval and display of license terms, holdings information, entitlements and other information related to electronic resources. Also known as ERM

Ethiopian Higher Educational Institutions: Is an educational institution which is governed by MOE in the country and deliver the educational level beginning from higher diploma program to PHD level.

Libraries: A source of organized, classified, and sorted information resources where found

Resources: are a sources or supply from which benefit is produced for users (e-books, e-journals...).

Service delivery: tools or products of electronic resources which provides access for users.

CHAPTER 2

LITERATURE REVIEW

2.1. Collection Development

2.1.1. Collection Development in University Libraries

An anticipation of demand is a rule of collection of library materials. Materials acquired by a university library should have some relevance with the parent organization and to the potential need of its users. The main library collections for communication and information services in most of the university libraries are books including society publications, periodicals, standards, patents, reprints, trade literatures, maps, charts, films, slides, microfilms, microfiches, film loops, tapes, etc. Naturally, due emphasis is being given for the procurement of those materials. In the present day where specialization has become the order of the day, books render only the fundamental primary information. By the time books are published, the information contained therein becomes source of basic nature. The specialists/researchers of the day require the latest information in the fields of their specialization/research; therefore, it becomes imperative to acquire relevant periodicals, proceedings, transactions and reports (Arias, 2000).

Vohra (2003) revealed that in the current electronic information environment emphasis is towards excellent collection than large collection and development effective means of gaining access to remote databases. Today internet has established itself as the store house of all worlds " resources in the electronic form. The paper examined the impact of the information technology on libraries, especially development of digital libraries, internet, electronic publications, CD ROMs. Electronic information resources have brought in new system of storage, retrieval, preservation & conservation and computerized information system & services. Policies and programs relating to collection development should be in the context of current information environment(Vohra ,2003).

According to Pandit (2004) the collection development is a vital process in creating and building a library collection. It is a well planed activity for which a well defined policy is essential. She also concluded in her paper that digital resources are affecting collection management policies

and they are drawing attention to two areas that how do collection managers react to the changing information need of users. Other is with more and more resources available in the digital format; the collection development has to include these resources, thus making them easily accessible to the users. The policy should include these resources enabling their selection, acquisition preservation and distribution. Olajojo and Akewukereke (2006) also stated that collection development is a planned, continuous and cost effective acquisition of quality, relevant materials to meet the needs of users and the objectives of the library. Collection development is not only growth in volumes and titles but in the quality of acquired materials in enhancing effective information delivery. It is only from this perspective that the word “development

” could be me

about the collection development policy which establishes ground rules for planning and budgeting, selection and acquisition of library materials. He also mentioned about the ALA standard as discussed by Carter as three elements of collection development policy are general overview, which is the introduction and general collection; detailed analysis of subject collections and a miscellaneous section.

As it is stated by Sanchez Viganu and Presno Quesada(2006) the collection development in a digital environment. Developing digital collections is a logical consequence of inserting information technologies in organizations. The usual route towards other models of libraries has allowed the development of the digital collections as a source of digital libraries. The current information society requires collection development to guarantee suitable resources in information organizations. The authors also gave a new way of looking at the development of digital collections. In this paper they proposed a cycle to create a digital collection starting from the established precepts for traditional collection development.

According to Pandhey (2008) among three important functions of librarian namely collection, storage and dissemination of reading material, the collection plays vital role of the libraries. In order to meet the user’s requirement the staff of the library must keep in mind five Laws of Library Science given by S. R. Ranganathan. Keeping in view these laws every library must build and develop their collection so that it can help in furtherance of education and help its users step into a world of adventure and learning.

2.1.2 Monitoring and evaluation of electronic resource usage

Venkadesan, Jagannath and Puttabasavaiah (2004) stated that the library environment is currently undergoing a rapid and dynamic revolution on leading to new generation of libraries with an emphasis on e-resources. On one side, there is an increasing demand for good library collection in terms of large amount of data/information and on the other hand, the publishing media is striving hard to support this demand at lightning speed by way of e-publication as well as online access. As a result, a large number of e-resources are published all subject areas. Therefore, library needs to adopt electronic media for its collection development in a better way to fulfill the requirements of users. They also described in details, the steps taken by the library for a comprehensive e-resources access package model so that the researchers reap the maximum benefits by giving access to reasonable level to meet their information requirements for academic and research activities.

Mounissamy, Kaliammal and Swaroop Rani (2005) revealed that e-resources offers today's users with many opportunities that were not available to predecessors. The e- journals service for the users, it is extremely important to show the accountability because e- journals are quite expensive and are leased rather than purchased. Present study was undertaken to know the level of use of the available electronic journals, how faculty and students feel about various issues relating to e-journals and whether attitudes change depending upon gender, age, access place and branch of study. They concluded that the younger generation has accepted the digital reading culture. Low-level problems, especially delays in gaining access and impediments to moving about, within and between journals are major de-motivating factors in the use of electronic journals. They also stated that some of the problems are within the control of the publishers and can be alleviated by the publishers like length on screen reading, double column layouts, the adobe Acrobat software does not support user- friendly journals usage. It is slow to deliver articles. There are some factors those are not under the control of the publishers of e-journals such as network delay, increasing traffic and inadequate bandwidth are to be taken care of by the subscribers.

Manda (2005) noted that the use of PERI resources was related to the status of the user, their training and their awareness of availability of the resources. Levels of awareness of electronic

resource provision another area of concern when monitoring the use of electronic resources. In their study Kiondo and Nawe (2005) concluded that the lack of awareness of the wide range of electronic resources available has contributed to the low level of use of library resources.

2.1.3. The electronic resource use environment

White and Crawford (1997) opined that electronic resources are becoming increasingly important to libraries of all types and sizes. Instead of focusing on how well a given item fits into or supports the collection, the policy gives general guidance on the selection of electronic resources. The general collection development guidelines for electronic information resources include relevance and potential use of the information, redundancy of the information contained in the product demand for the information, ease of use of the product, availability of the information to multiple users, stability of the coverage of the resource, longevity of the information, cost of the product, predictability of pricing, equipment needed to provide access to the information, technical support and availability of the physical space needed to house and store the information or equipment.

Tenner, Gyeszly, and Rholes (1998) in a research paper entitled “ Electronic and traditional sources for a newly established branch library: Product availability and user references” author emphasizes the trend toward electronic publishing of journals holds out the promise of greater availability of these materials without regard to physical location either of the collection or the patron. In concert with faculty from the departments of political science, economics and the George bush school of Government and public Service, reference and collection development librarians developed a score collection for this facility. A review of journals requested by the faculty served at political science and economics librarians revealed that not enough of these titles were available electronically. Further, what was available electronically often did not include the full-text, cover-to-cover completeness necessary. Faculty preferences remain for the print versions, citing problems with coverage, reactions to electronic journals. Issues explored include: access to e-journals: reading habits; financial implications; and the future roles of librarians, subscription agents and publishers in the electronic environment.

Kaur and Satija (2007) discussed various trends in collection development in digital environment. The changes that have occurred in acquisition, retrieval and storage of information

due to technological developments have been discussed. They also discussed about the limitations, restrictions, and problems being faced by librarians and readers. The way these developments have affected the academic environment and changed the role of librarian has also been portrayed. With more resources are available in digital format, the collection development has to include these resources thus making them easily accessible to users. He also concluded that the day is not so far off to visualize all Indian libraries with huge digital collections and latest technology to access the e-resources.

2.2. Changing Information Environment

According to Johnson (2004) the introduction of electronic journals and electronic versions of journals has made serials collection management more complex. Libraries may want to offer a particular journal in both print and electronic formats, but find that it is often not financially feasible. As budgets become tight, librarians have to choose between one format and another. In order to make the decision about what format to purchase, librarians need to know the format preferences of the users.

Wajih (1997) explained the changing phase of Collection Development regard of information explosion. He discussed about cooperative collection development policies suited to the current philosophy of providing access to information through a sharing mechanism stressed upon the need of improving the quality for library services through it and also discussed its advantages. Wakhare and Jaleel (1997) discussed about the collection development in the internet era with the help of some of the sources available in the internet. It also argued that the internet itself is a better tool for accessing the collection rather than processing. They concluded that in the context of networks, there would be need to think of information resource development rather than collection development. Well defined policy should be formulated in the present situation to need the information hungry and impatient. Nevertheless, the librarian should provide services which should encompass and enriches the potential of the internet. Adams and Bonk (1995) found out that university faculties are eager in using electronic information resources and point out that the libraries should procure e-resources to provide effective information services.

According to Rao (1997) the impact of CD- ROM databases, internet and digital libraries on collection development is quite significant. Challenges in this regard are discussed in his paper

and argued that it is necessary to conduct a survey of available sources on various networks. The policy for collection development should take care of recent advances in information technology, and its impact. He concluded that IT has its impact on collection development and it is necessary to monitor what is available on various networks. It may also be necessary to search frequently such networks and download the relevant records depending upon the local interest. Effective techniques may have to be developed for storing and searching. Since electronic publications, including the CD-ROM databases are increasingly becoming popular; the policy towards collection development should take care of such trends.

On the other hand Amudhavulli (1997) studied the problems of electronic sources such as integrating them with traditional forms, costs of acquisition versus access, determining what collection development really means in the electronic environment regarding collection development in traditional libraries and how it can be tackled in IT environment. He also studied the problems those are facing by the collection development issues like finding out what is available, evaluating the sources available acquiring and serving the sources required. He pointed out that, collecting electronic information is more problematic than collecting printed documents. Whatever form it takes, still requires policies and strategies.

Bansode, et al. (2009) view that ICTs have allowed traditional LIS methods to be replaced by the newer, faster, and more accurate ways of transmitting information. The changing format of resources is the challenge for the library in preserving and managing them. Information technology in combination with changes in organizational structures and methods of working has led to an increasing amount of information. Asproth (2012) has studied some problem domains of long-term preservation and how ongoing research matches these domains is presented. It appears clear that although much of the challenges associated with digital preservation are strategic, organizational and not only technical, the research mainly concentrates on solving the technical issues.

2.2.1 Library Resources and Services in Digital Environment

The advent of computer has also brought a revolution in the field of Library & Information Science. Traditionally Digital means the use of numbers and the terms comes from digit or figure. The digital environment means that every copy is a technological equal of the original. Absent printed output, content may exist without form. Paper becomes an interface, a volatile, disposable medium for viewing information on demand or a storage medium. It no longer serves a primary function as a communications medium. That attribute is performed by the computer's monitor screen. Libraries are no exception to this first changing digital environment. Library in digital environment basically is a computer based system for acquiring, storing, organizing, searching and distributing digital materials for user access. E-resources are the primary attraction of readers in today's digital environment. It is difficult to know what information exists, what format it is available and where to look for it. Libraries in digital environment concern with digitization of existing library materials, connectivity to the users in the world online and offline, integration with networking and availability with the World Wide Web.

According to Cotta-Schonberg, (1989) in the last few years, librarians are hotly debating whether computers have any place in libraries, just as they discussed at the beginning of the twentieth century in respect of typewriters. Many research studies have focused on the use of electronic resources or on their feelings about electronic and print resources in the university library. Today, the library community as a whole is realizing that apart from the immediate practical advantages, computers and information technology (IT) in general are the tools of new information era which was started with Gutenberg and lasted until the middle of the twentieth century.

Singh, Kapila and Pateria (2007) stated that the concept of library is changing very fast due to the impact of ICT. Now the libraries will not have only printed collections but also digital resources, which are not seen physically. The technology has forced the library to digitize information. Keeping in view of all this libraries will need redefining or reengineering as they may be named as Knowledge Management Centers, Cyberary, Ebrary, Virtual library, Digital Library. No doubt technology will play major role in changing the shape of libraries in the time to come yet basic material will remain the same. Whatever the technology may come and find

use in the library for the benefit of users to access the information as a fast mode of communication and whatever nomenclature may be given to library, but it is a hardy matter that the print media will hold the vein of library for the society.

As it assesses by Shimmon (1995) the future of libraries and librarians regarding impact of Technology; and presents evidence for and against their decline. The library services always depend upon the involvement of a librarian in the service modules prepared for the system. Atton (1996) has found in his study that the information provision in the academic libraries depends on the librarian involvement and his interest in the services. This is the era of constant changes. Yams (1996) discussed the changes likely to take place in the information professional's role in the IT environment. Boissonnas (1997) discuss in detail about the managing technical services in a changing environment, specifically touching the experience of Cornell University, New York. He reports the study made in Cornell University on technical services. In the changing Information Technology environment, the library can expand resource sharing efficiently by overcoming the traditional methods.

According to Prabha and Donnelley (1997) resource sharing in a changing environment and they explain how library can overcome the problems involved in the services. Similarly Mittal (1997) explains the changing role of the librarians in an electronic environment. He says today's librarians' responsibilities can be those of a system analyst, an information manager, a database manager, a network manager and as an intermediary. Klein and Ross (1997) describe how end user search services can become a force for an expanded information management and technology role for the librarians. The information need demands current, comprehensive and cost effective devices, then one should have the correct mix of technologies, online and CD-ROM.

Rieh (1999) gave a thought on the academic library reference services and examines the changes in IT environment based on the perspectives of managers, librarians and users. He proposes the directions to users' information searching process and librarians' interventions in reference service which are integrated. Davis (1999) talks about changing role of serial acquisitions librarians in the electronic environment. He reports on a discussion which took place at the American Library Association's 1999 Midwinter Meeting.

2.2.2. Access to Electronic Library Resources and Services in Africa Academic and Research Institutions

Boakye (1994) explains about the academic libraries of developing countries and their services. He describes the document procurement methods and services. The role of a librarian has changed due to the IT appearance in the educational system.

In Tanzanian academic and research institutions, the use of CD-ROM facilities from the early 1990s was heralded as the first innovative program towards the adoption of electronic library resources. By the late 1990s popular use of internet and internet resources had begun to take root. The initiative of the INASP through its Program for the Enhancement of Research Information (PERI) in 2001 was the first significant attempt to introduce the use of full-text electronic journals to the research and academic community in Tanzania. The government and academic and research institutions in Tanzania have recognized the importance of ICTs in teaching, learning and research. The national ICT policy and various ICT-related programmes in a number of academic and research institutions point to the perceived key role that ICTs play in various organizations.

The need to undertake a survey arose from the observation that electronic resources, and especially the PERI resources, were utilized in Tanzania. It was observed that few institutions and end-users were accessing and using these resources. Even within institutions where there was significant use, there was a feeling that this use did not involve a wide spectrum of users. Furthermore, questions were being raised as to whether those who were using the resources were doing so effectively. The survey examined factors that influenced the use of these electronic resources.

Rosenberg (1998) called the lack of funding for libraries in African universities a 'permanent headache'. She further observed that, even after attempts to revitalize the higher education sector in Africa, university library collection development, and especially journal subscriptions, had been neglected.

2.2.2.1 Evaluating Electronic Resource Programmes and Provision

There are numerous challenges that hampered access to electronic resources in Africa. In the first place there is an inadequate information infrastructure and the absence of basic facilities required to access electronic resources efficiently. These include power supply and telecommunications (satellite communication, fibre optic cables and digital telephone transmission). Secondly, there is a cultural dimension related to the adoption of innovation, where academic and research libraries fail to provide the visionary and committed leadership required.

Ondari Okemwa (2004) also observed the lack of a culture of sharing knowledge and information in Africa as one of the challenges to the adoption of innovation generally: 'What you know belongs to you and you alone. People in the region stay with important knowledge and die with it without bothering to pass it to the younger generations.' Mutula (2005) underscores this point as being problematic: 'the presumption of a one-size-fits-all technology approach to bridging the digital divide, implementing technologies without integrating them into people's cultural priorities'.

As stated by Srishaila (2001) the advent of electronic information and with it the chaos, internet needs the science of library professionals to bring in some order and thus make the existing resources more accessible and more widely used. Librarian need to exploit technology to build a bridge between traditional library systems and digitized documents. Attempting at indexing and cataloguing e-documents is a step forward in this direction.

Bharati and Zaidi (2008) also described the use of e-journals and e-databases subscribed by UGC- INFONET consortium by the users of Aligarh Muslim University. Besides extensively covering the use of e-journals and e-databases, the paper also examined the utilization and satisfaction levels of users with respect to e-journals and e-databases. They concluded the e-resources are highly useful for the research and academic community in the present electronic environment. They also suggested that the academic community the authorities of the university library must conduct the user awareness programs to train the research and academic community in the maximum utilization of these electronic resources more effectively and efficiently at the campus.

2.3 Electronic Resources

Information in electronic format was created with the advent of the computer in the 1950s; it was not until early 1960s that the first database suitable for searching was developed. A Medlar was the first on-demand computer based information retrieval service and it was developed primarily for the medical profession. In 1971, Medline 844 library trends/spring 2000 online versions of Medlars, was the first major online dial-up database search service. In the following year, Dialog offered public online commercial database. With these first databases, there were no real acquisition decisions, as they were offered as access services to which libraries could subscribe. Actual searching of these databases produced charges that many libraries passed along users. While information revolution was clearly underway, it was not until after the introduction of CD-ROM in the mid 1980 that electronic resources began to have a major in libraries (Meadow, 1988).

According to More and Manchare (2012)“Electronic resources” refer to those materials that require computer access, whether through microcomputer, mainframe, or other types of computers, and that may either be locally mounted or accessed remotely via the Internet. Some of the common types of e-resources are:

- Indexing and abstracting databases
- Full-text (aggregated) databases
- E-journals
- E-books
- Reference databases (directories, dictionaries, encyclopedias, etc.)
- Numeric and statistical databases
- E-theses and e-dissertations

E-journals are simply electronic versions of periodicals that publish articles relating to the scholarly work of a field, generally written by the experts in that field. Electronic journals are scholarly journals or intellectual magazines that can be accessed via electronic transmission. In practice, this means that they are usually published on the Web. They are a specialized form of electronic document: they have the purpose of providing material for academic research and

study, and they are formatted approximately like journal articles in traditional printed journals. Many electronic journals are listed in directories such as the Directory of Open Access Journals, and the articles indexed in bibliographic databases and search engines for the academic discipline concerned (More and Manchare ,2012).

An electronic book is a book-publication in digital form, consisting of text, images, or both, readable on computers or other electronic devices. Although sometimes defined as "an electronic version of a printed book", many e-books exist without any printed equivalent. Commercially produced and sold e-books are usually intended to be read on dedicated e-readers. However, almost any sophisticated electronic device that features a controllable viewing screen, including computers, tablets and smart phones can also be used to read e-books (More and Manchare ,2012).

2.3.1 Use of Electronic Resources by Academic libraries

The purpose of academic libraries is to provide information resources which meet their users' needs; therefore, electronic resources have become a major part of the academic library's collection in the fulfillment of its role of teaching, learning, research and services to the community. Academic libraries have focused their attention on acquiring electronic resources, organizing them and presenting them to their community. In the light of the successive changes in the field of information technology and changes in users' expectations, libraries have been obliged to adjust their strategies and functions to take these changes into account. Electronic information sources have become part of library collections, in academic libraries in particular. In view of the multiplicity of forms and sources, providers, and the methods of providing these resources to patrons of the library, the emergence of new tools and techniques for organizing and delivery to clients, many modifications and innovations have had to be carried out.

Libraries build their collections of electronic resources in an attempt to give their communities rapid access to them. However, finding ways to manage and deliver the library's collection of electronic resources has become a major challenge to libraries and also to librarians. Breeding (2004) states that: "One of the key jobs of the library is delivering access to electronic resources. As the library increases its investments in electronic resources usually at the expense of print

materials it's vital to provide convenient ways for users to find the information they need within those resources" (Breeding, M. 2004).

Sharma (2009) identifies e-resources to include journals, data archives, manuscripts, maps, books, magazines, theses, newspapers, e-mail, research reports and bibliographic databases that used in the academic area. Ibrahim (2004) adds websites, online catalogues and online reference works; while Aramide and Bolarinwa (2010) mention A-V resources, instructional audio tapes, instructional video tapes, VCD/DVD, radio, television, multimedia projectors, CD-ROMS, computers, telephone facility (GSM/Landline), VSAT, printers, and digital cameras. Omotayo (2010), Thanuskodi (2010), Sharma (2009), Borrego (2007), and Ibrahim (2004) have all reported that *e-journals* are the most used among the arrays of available electronic resources.

2.4. Electronic Resource Management

Rapid growth in the number of electronic resources over the years and the complexity of managing e-collections has provided with the new tools for electronic management. The electronic resources such as e-journals, e-databases and e-books require efficient and effective management. Electronic resources are sources, which provide on time information in electronics format, the information is available at any time as per need of users. Electronic resources are enabled by technical capability to create, search, and use enormous amount of information.

Electronic resource management (*ERM*) is the practices and software systems used by libraries to keep track of important information about electronic information resources, especially internet-based resources such as electronic journals, databases, and electronic books. The development of ERM became necessary in the early 2000s as it became clear that traditional library catalogs and integrated library systems were not designed to handle metadata for resources as mutable as many online products are. The idea of developing electronic resource management systems emerged in 2001-2002, growing out of research by Tim Jewell at the University of Washington. The Digital Library Federation(DLF) and National Information Standards Organization (NISO) began work in May 2002 to develop standards for ERM data. These standards were published in the 2004 as *Electronic Resource Management: Report of the*

DLF ERM Initiative. Since the publication of the report, several vendors of integrated library systems have released ERM products (Timothy, 2004).

Electronic resource management is an area of technical services responsible for the evaluation, selection, pricing, securing, maintenance and provision of electronic resources such as e-journals, e-books and databases. As electronic collections continue to grow exponentially in both size and use, ERM has emerged as a distinct activity within acquisitions units, and a dedicated specialization for librarians (Bergman, 2005).

An ERM system is basically a tool for librarians, but its impact also relates to end users. The information gathered in the ERM system can serve as a starting point for users' interaction with e-resources. Such interaction would be built on the ERM system's integration with other library products, such as a link server, Meta search system, or library OPAC. For example, an OPAC could query the ERM system for license permissions to display to the user. However, with a comprehensive knowledge base, such an ERM system may replace some of the roles assumed by other products, such as the generation of alphabetical lists of e-resources (Kumar and Singh, 2015)

EOS International (www.eosintl.com) is a newly released ERM module, an enhancement to its EOS, Web product line. EOS ERM helps library professionals manage all electronic resources and web subscriptions, such as electronic journals, databases, and electronic books. It provides a single solution to control how electronic resources are found by patrons and how the information is presented through the web OPAC. ERM that the electronic resource can be linked to the bibliographic record and web subscription, making easier for patrons to find the information they are looking for on online catalog. To further increase an electronic resource's accessibility, the user can also define a classification scheme for the bibliographic record. EOS ERM is tightly integrated with the EOS Classification Management module, which allows users to determine which electronic resources display in search results and what items a patron can view or check-out from the collection. Librarians can control how their electronic resources are found by patrons and how the information is presented through Web OPAC. EOS ERM simplifies the way patrons gather electronic resources and perfects the way librarians manage their electronic collections (EOS International, 2010).

2.4.1 Electronic Resource Management in Academic Libraries

The development of information technology and the dissemination of Web environments have a dramatic effect on the user behaviors in information usage. The library user requests swifter and more convenient usage of information beyond the time and space barriers, which changes the library atmosphere. The workflows from acquisitions to user services and the life cycle of electronic resources is quite different from that of print resources since it is characterized by access without holding the physical objects. Also, the functional responsibilities for managing electronic resources are often distributed over departments such as serials, acquisitions, and library systems. As licensing electronic resources has greatly increased in recent years, libraries have struggled to control this information in paper files, integrated library systems, separate databases stored on local computers or network. Under these circumstances, the need to get a better handle on these resources has grown. The primary objective of the academic library is to make its services contribute as effectively as possible to the instructional program of the libraries. “Libraries have struggled to manage the burgeoning number of electronic resources (Tull, Crum, Davis, & Strader, 2005).

Electronic resource management involves all of the processes in the lifecycle of e- resources: evaluation and assessment, trials, acquisition, renewals, cancellations, budget management, access issues, and troubleshooting. While many university libraries now employ a dedicated e-resource librarian to manage those processes, the reality is that electronic resources functions normally go through a number of people across the library including subject librarians who help make acquisitions decisions, acquisitions staff who process orders and record costs, and bibliographic services staff who catalog electronic resources. If information about these resources is not organized and kept centrally because the information is found in a variety of spreadsheets and emails, the aforementioned processes become inefficient (Aaron Lupton and Marcia K. Salmon, 2012).

In response to this countless of information and personnel involved in purchasing and maintaining electronic resources, university libraries now utilize ERM systems to organize records, smooth out processes, and promote collaboration by ensuring that everyone has access

to the information they need by maintaining it in one place. Popular commercial ERM products include Ex Libris' Verde, SirsiDynix's ERMS, Endeavor's Meridian, and Innovative Interfaces' ERM. However, some institutions are custom-building their own ERMs in-house (*Aaron Lupton and Marcia K. Salmon, 2012*)

“Several factors have rendered the job of librarians who deal with electronic resources extremely challenging. “Why are e-resources so difficult to manage?” According Farb & Riggio (2004) the reasons for this complexity are manifold. Unlike their print counterparts, e-resources may be accessed via a diverse array of data formats, delivery systems and interfaces. They may be acquired individually or as part of packages, and can be sourced direct from providers or indirectly through aggregator services. Pricing models and licensing terms for e-resources are legally intricate and largely non-standardized. E-resources also entail administrative activities not applicable to print resources, including the management of user authentications, trial subscriptions, contractual restrictions, archival and preservation issues, and technical troubleshooting. In short, e-resources display significantly different characteristics and requirements than their print counterparts.

The emergences of electronic library resources have not being threat to librarians but it will continue to threaten librarians that fail to admit that it is more of a ‘challenge than a threat’. The emergence of electronic library resources challenges the professionalism of librarians in lots of forms. It challenges the diversify nature of the profession and it serves as a test of guiding principles of librarianship. If the library is truly a growing organism; then the emergence of electronic library resources should be seen as a growth in the profession. Are librarians of developing countries truly of diminished resources? Ogundipe (2005) describe librarians of developing country to be of diminished resources simply because most of the materials they have in their libraries are not current. But that does not mean librarians in developing countries should relent in their quest to meet up with the information needs of their clientele. Adopting electronic resources into their library collection will help in quite a lot of ways since library users of the present age are going electronic. Though, the emergence of electronic resources to librarianship, it presented itself in form of threat to librarians and it is admitted as threat by some librarians/individuals (*Oshilalu, Habdulhakeem Adeyinka, 2011*).

2.4.2 Electronic Resource Management Initiative

As institutions realized that effective communication about their common problem of managing electronic resources could lead to satisfying solutions they began to seek discussion outside their own academic institutions. Chandler and Jewell, (2005) stated that, The “Web hub for developing administrative metadata for electronic resource management” was constructed to facilitate the sharing of information about institutions developing their own electronic resource management systems.

Seetharama (1997) discussed the impact of information technology on collection development. . He also discussed about the changing role of libraries and librarians in handling traditional as well as electronic resources. The purpose of the Electronic Resource Management Initiative (ERMI) was to define an essential list of data elements that would construct a full and complete electronic resource management system (Chang,2003). In addition to defining the data elements, the group sought to develop workflows and promote standards for the management of the data Digital Library Federation, (2006).

Seetharama and Ambuja (2000) stated that the term “Library management” has been changed as „Information management “ now it is management “ . IT has made quick and easy access to information. The growing impact of IT has somehow completed librarian to use IT effectively to render service and with the growing number of e-resources, it has become imperative for information professionals to redefine the process of collection development.

According to Pandey (2010) the collection and management of digital resources dominated collection development and management literature. The mood of the literature was generally optimistic in light of the considerable challenges libraries faced in managing their resources to accommodate the rapidly growing and ever-shifting digital landscape. In the final report of the Digital Library Federation’s ERMI seven functional areas required to construct a comprehensive management system are identified: “listing and descriptive;” “license-related;” “financial and purchasing;” “process and status;” “systems and technical;” “contact and support;” and “usage” Digital Library Federation,(2004) By identifying these functional areas the ERMI hopes to

convey accurately to vendors or others wishing to build management systems what elements are needed Chandler,(2004). According to Rockman (2003) the libraries management should plan ahead and take their services to where users require most rather than becoming too limited or denying users the chance to learn in modern environment using virtual reference service.

2.5 Management service environment and resource delivery

According to Joint Funding Council's Libraries Review Group (2013) the management should be prepared to change decisions and procedures in order to improve service quality. Information strategies such as policies (for example a collection development policy) and procedures developed to improve the provision information.

2.5.1 Staffing and staff management

Staff is responsible for delivering services to the users. They are on the front line with customers. Strong management plays an important role in delivering services. However, every employee in the institution must share the responsibility to contribute quality. Improved service performance could be the result of staff commitment to service quality.

- Staff attitude - knowledgeable, enthusiastic, approachable, helpful staff - is a key ingredient of performance excellence
- Staff skills, qualifications, training and development, further education, workshops and conferences
- Performance management and reward systems to provide feedback on performance

When measuring quality in academic libraries, the needs and expectations of all the different stakeholders and users should be taken into account. The majority of users are full-time academic and non-academic staff, undergraduates and postgraduates. There are multiple stakeholders with different priorities and performance measure requirements: end-customers (students), service purchasers (academic departments, institutions), funding institutions (funding councils, government), guardians of quality (professional bodies), service managers, and staff Winkworth (2001).

According to Gaur (2003) human power is one of the three main components of reengineering process of library. He feels that the impact of the technology can be handled well if a well thought reengineering plan is in place for human resources.

2.6. Challenges of electronic resource provision and usage

Luther (2000), Dygert (2004) and Anderson (2006) identify several challenges faced by academic librarians in the provision of e-resources and in monitoring their usage. All these experts agree that monitoring e-resource use is a complex task as a result of several factors, including the diversity of resources and publishers, the diversity of mechanisms used to deliver, the diversity of methods and formats for data transfer, and the incomparability of data across different providers, which inevitably prevent useful local analyses. Dygert (2004) identifies further challenges, such as infrastructure support, the integration of e-subscriptions into the libraries' e-collections, and the ability to search multiple databases simultaneously. Anderson (2006) notes that the issues associated with electronic resource usage statistics are complex, involving the technical, conceptual, political and financial. The provision of e-resources to users at the University of Dares Salaam is faced by similar challenges. Technically, each e-resource provider has a different authentication mechanism, and users are bombarded with several user names and passwords. Users are required to register and to remember user names and passwords. Interface design, lack of integrated searching capabilities, and lack of access to full text e-resources accessed directly from the OPAC affect levels of e-resource usage as they make the whole searching process cumbersome and time-consuming to most users. In most cases these technical capabilities are lacking in most African academic libraries, including that of the University of Dares Salaam.

Ameen and Haider (2007) stated that, the major challenges in the area of collection management faced by university libraries in Pakistan. The challenges regarding collection management in university libraries in Pakistan are: handling the hybrid character of collections, service to users, training of collection management staff, collection evaluation, resource sharing and preservation. This paper provides an example of the challenges of university libraries in a developing country which must plan and develop a customized paradigm of library service which combines the traditional and modern services.

2.7. Related Works

In this section, the researcher has reviewed some related works that have been done on electronic resources in different academic libraries.

The first related work was done with a title of “Management of Electronic Resources by Cataloguers in Nigerian Federal University Libraries”: which has been conducted on the role of cataloguers in the management of e-resources and challenges faced by cataloguers in the management of electronic resources in Nigerian Federal University Libraries (Okoye and Ugwuanyi, 2011). The researcher used descriptive survey research method and questionnaires were applied to collect necessary data.

The finding of the research indicated that for cataloguing of e-resources staff need to know when and how a resource can be accessed with the fact that an efficient electronic resource management should be disparate. The researcher also indicated that e-resources management techniques for managing, accessing, and cataloguing online information need serious attention in Federal University libraries of South East Nigeria. The Federal Universities are, University of Nigeria ,Nsukka, Michael Okpara University of Agriculture Umudike, Federal University of Technology Owerri and Nnamdi Azikiwe University, Awka. Maintenance of URLs, cataloguing as well as licensing and integrating processing of electronic resources are problems cataloguers have to contend with. Then, they recommended greatest investment an institution could have is investment in human capital. Cataloguers need to acquire skills to manage these applications. They should also acquire new techniques of analysis for dealing with networked resources.

The second related work was done on the role of electronic resources in the provision of information services: a case of Kisii university library. It was conducted in Kenya, Kisii library (Lekaram, 2013). This study is an analysis on the role of electronic resources in the provision of information services in the Kisii university library. It also tries to identify how the electronic resources are used in the library and the challenges being faced while trying to offer electronic resource services. To help answer the research questions the researcher carried out a survey, it involved data collection using various methods. A case study used for the study. The researcher used observation and questionnaires to collect information, by observation the researcher moved

around to collect information in the library on the role of electronic resources in the provision of information services. Simple random sampling was used to select samples.

The result showed factors that affect the use of electronic resources in the provision of information services at the Kisii university library. The major factors identified were inadequate ICT facilities, poor internet connectivity, lack of instruction and appropriate method to make users aware of e- resources and lack of cooperation from librarians. The finding further showed that there was significant relationship between the library management system and effective electronic resources provision ($r = .071$, $N = 414$, $P > .05$) The study recommended that the provision of basic infrastructure that support the effective use of electronic resources should be made readily and available, this will help to ensure that the electronic resources are put into maximal use by the library clientele, thereby ensuring the achievement of the library's objective which is satisfying the users, information needs.

The third related work was done with a title "A Case Study of Acceptance and Use of Electronic Library Services in Universities based on So-utaut Model" and was conducted in Bahir Dar University (Abinew and Sreenivasarao, 2013). They used questionnaire survey methodology. The study has tried to investigate the determinant factors that affect the acceptance and use of e-library service end users using the SO-UTAUT model.

Based on the analysis, they point out the significant for library management efforts at marketing the service and ensuring patronage by the University. Then, they recommended the e-library staff should be trained with the requisite technical or IT skills to manage resources effectively and assist users in their quest for information needed to meet their diverse needs.

2.8. Conceptual framework of the study

The conceptual framework of the study, which deals with the electronic resource management on service delivery, is shown in Fig.1. The framework lists the independent variables expected to affect and influence the dependant variable, service delivery of e-resources. This conceptual framework was constructed based on the literature review and personal observation of the researcher.

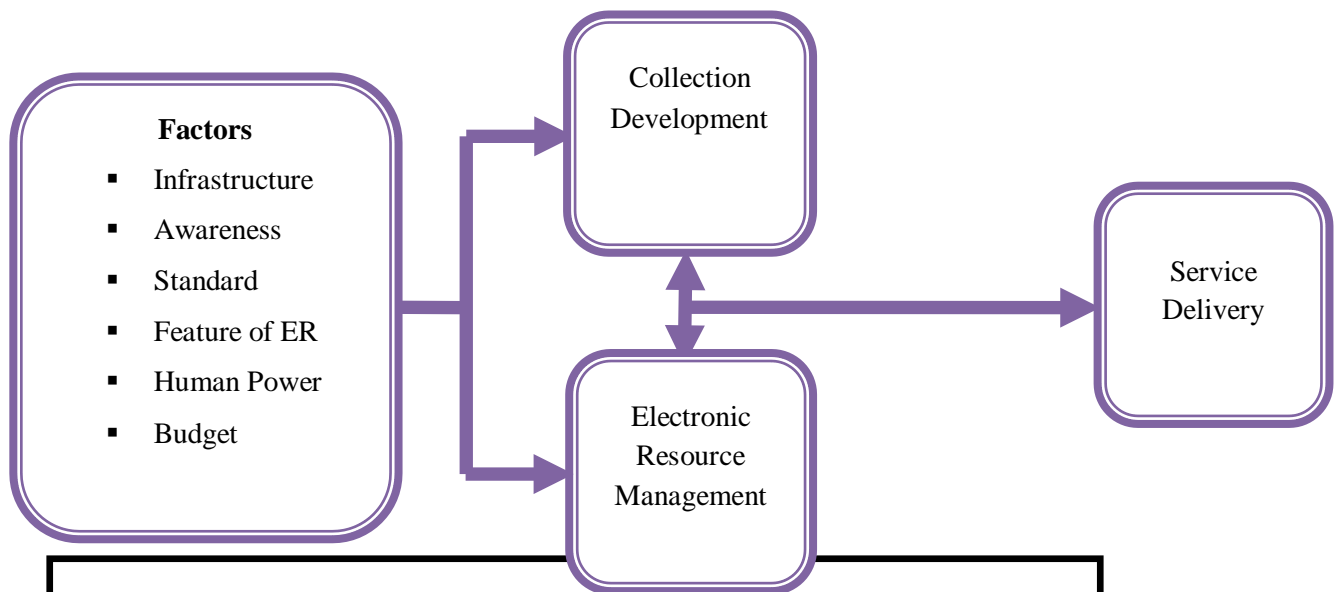


Figure 1: Conceptual Framework

CHAPTER THREE METHODOLOGY

3.1. Research Design of the Study

A cross-sectional survey research method employed for the study. The purpose of this study was to assess ERM on service delivery of electronic resources in the selected Ethiopian academic libraries (i.e., AAU, ASTU and JU).

3.2. Description of the Study Sites

There are 33 universities established in different parts of Ethiopia that have been authorized by the ministry of education (MoE, 2011). The universities listed on study site were AAU, ASTU and JU are part of the 33 public higher educational institutions in Ethiopia. JU was established in December 1999 by the amalgamation of Jimma college of Agriculture found in 1952 and Jimma Institute of Health sciences was established in 1983 (JU website, 2013). Jimma University is located 352 km south west of Addis Ababa at Jimma town with an area of 409 hectares. It has four campuses, namely JU main campus, JU College of Agriculture and Veterinary Medicine, College of Business and Economics and Kito Furdisa (Jimma University Institute of Technology). JU has more than 100 undergraduate programs, 30 master's degree programs and 3 PhD programs. These programs are offered in different disciplines including Medicine, Engineering, Agriculture, Business, Social and Natural Sciences.

AAU is recognized as the primary academic library resource in Ethiopia. The University was founded in 1961 when the University College of Addis Ababa, founded in 1950, merged with a number of existing institutions of higher learning, each with its own book collection. Library collections and services were gradually centralized. The result is a central library with six branch libraries in Addis Ababa, and subject specialty libraries focusing on areas such as agriculture, law, medicine, and technology on campuses in four other cities (Ademasu, 2011). The Kennedy Library is reserved for use by staff and students beyond their first year; incoming students are relegated to special reading rooms, and graduate students have their own library. Complicated lending restrictions are enforced, depending on a student's year of study. Since textbooks are not readily available, the library's reserve section maintains multiple copies of textbooks for heavy in-house use by students.

The library offers reference services and user education (Pankhurst, 1988). Library services for the visually handicapped have been available since 1976 (Gebretsadik, 1992). The Library supports its own bindery and microfilm production facilities.

ASTU established in September 1993, was the first institute in Ethiopia to offer degree programs for technical teachers. Formerly it was known as Nazareth Technical College and Nazareth College of Technical Teachers Education. The university adopted the name Adama University on July 9, 2005. The same college became a university, namely Adama University (AU), in 2006. Five years later, the university once again changed its name to Adama Science and Technology University (ASTU). The university is located in two towns-in Adama, main campus, and Asella, hosting the School of Agriculture and School of Health Sciences, respectively. ASTU has been re-established as a model Science and Technology University under Ministry of Science and Technology (MoST). The new ASTU has been destined to play the leading role in climbing up the technology development ladder for the country, concentrate on science and technology fields, and intensively work on innovation, research and technology transfer (ASTU website, 2015).

3.3. Study Population

The respondents of the present study included library staff of AAU, ASTU and JU. The researcher felt that these respondents were well suited for the study and would give in-depth information and provide better and comprehensive information on e-resources management and services. The total population of the study is presented in table 3.1.

Table 3.1.: The total population of study library staff

No	University	Library staff
1	AAU	283
2	ASTU	95
3	JU	216
Total	3	594

Source: *ASTU Library, 2014, Office of Academic Staff Affairs, Addis Ababa University, 2012/13, uT•ŸM e` ÁK< sT> W^}™< İç 2006*

3.4.1 Inclusion and exclusion criteria

The Population of the study was three universities library staffs (AAU, ASTU and JU). All academic librarian, library directors, branch library heads, library system developers, Automation and Digitalization sections, Technical service sections and IT technicians in the library were included in the study. Administrative staffs, other academic staffs and students of universities were excluded, hence the study assess only ERM on service delivery.

3.5. Sampling method

Purposive and simple random sampling techniques were employed to select the study sample. In this study, purposive sampling was used to select the study sites, academic librarians and library system developers. Also used for library directors for interview that the researcher believed were resourceful for the study. Simple random sampling technique was used to select sample from other librarians. A simple random sample is obtained by choosing elementary units in such a way that each unit in the population has an equal chance of being selected. For sample which select through simple random sampling researcher were get staff list from human resource management office and used lottery method to select samples.

3.6.1 Sample size determination

The sample size was calculated using a single population proportional formula.

$$n = \frac{(Z_{1-\alpha/2})^2 \times p(1-p)}{d^2} \quad (\text{Kothari, 2004})$$

Where

n= the desirable calculated sample size

Z ($\alpha/2$) = 1.96 (95% confidence level for two side)

p= proportion of population and barriers (50%)

d= degree of accuracy desired setting at (5%)

Therefore the value of **n** was calculated as follows

$$n_o = \frac{(1.96)^2 * 0.5(1-0.5)}{(0.05)^2} = 384$$

n_f = n_o / (1 + n_o / N) Where,

n_f = the desired sample size when population is less than 10000

n = the desired sample size when population is more than 10000

N = the estimate of population in each university.

$$n = \frac{n_o}{1 + \frac{n_o}{N_{sub}}} \quad \text{For } N_{sub} \text{ less than } 10000$$

Therefore n calculated as follows:

$$n = 384 / (1 + (384/594)) = 233$$

Accordingly, the sample size formula the sample size the sample proportion is as follow

Table 3.2 sample size from each university

No	University	Total number of library staff	Sample Size
			No
1	AAU	283	111
2	ASTU	95	37
3	JU	216	85
Total		594	233

3.7. Data Collection

The methods used to collect data for this study were questionnaire, interview and observations. From different categories of each data collection methods fixed alternative questionnaire method was used to collect data from the librarians in the library whereas semi standardized face-to-face interview method was used to collect data from the library directors and also detailed observation was done for the availability of e-resource management guidelines and services at each study site.

The questionnaires included several types of questions. Among different types of interviews, the semi-standardized face to- face interview method was used to collect data that could not be directly observed. The semi-standardized interview has some structure to it, but the wording of the questions was flexible, the level of the language may be modified, and the interview may choose to answer questions and to provide further explanation if requested. Respondents have a greater ability to express their opinions in their own words when using this type of interview structure.

3.8.1 Data Collection Procedure

The data for this research was collected using an interview, observation and questionnaire (see appendix 1). The questionnaires were created using suitable questions modified from related research and individual questions formulated by the researcher and approved by the advisors. To collect data from the respondents the researcher got official letter from the Department of Information Science, JU requesting for assistance from institutions of all study site of the study. Then the researcher submitted the letter to the academic vice presidents (AVPs) of the study sites to get permission to conduct the survey. The AVP forwarded the letter to concerned bodies by approving the study can be done. Following, sample proportion for each library was calculated and the questionnaire was distributed to staff by using purposive and random sampling technique. Lottery system was used to pick a sample from each library sections.

3.9. Pre-test of data collection instrument

Prior to final data collection, a pilot study was done to test the questionnaire. It was geared towards establishing whether the questions were clear, appropriate, and if there were other questions that could be asked. It also helped in testing the language and content of the questions, and the length and approach of the interviews. Modifications were then made appropriately on the basis of the findings of the pre-test. 10% of the total study sample was used for the pre-test exercise. Mugenda and Mugenda (2003), argue that at least a tenth of the total population is adequate for a pre-test. Purposive sampling technique was used to identify pre-test subjects. The pre-test was done in a neutral location that was not used in the actual field work (Edwin et.al, 2011).

The chosen place for the study was information science postgraduate class and was done by distributing questionnaire randomly for 15 students and interviewing one student. All of them were Electronic and Digital Resource Management student and they were library staff of JU, ASTU, Mekele University and Arbaminch university libraries. The responses were then analyzed with the view to improve the reliability and validity of the instruments. The pre-testing exercise helped in identifying problems in the interview and the questionnaire. The major problem was found with the clarity of the questions in the interview to the library director. Modifications were made appropriately on the basis of the suggestions offered and the findings of the pre-test. These

modifications included removal of questions and addition of some missing points that the researcher felt were redundant and changing the vocabulary.

3.10. Data Quality Control

A brief orientation was given to the data collectors. The questionnaire was done at first time and necessary adjustments done based on the feedback. The completeness and consistency was also checked at the site by the researcher. The missing data, outliers, completeness and consistence were checked before data analysis. This increases the validity of the research.

3.11. Data Analysis, Presentation and Interpretation

After the required amount of data was received from the field, it was reviewed for any inconsistencies, organized and then analyzed. Data analysis statistical software, SPSS version 20 were used, data was analyzed using both inferential and descriptive statistics. Interpretation of the data was done and a summary report developed identifying the major themes and associations between them. Direct quotations, percentages, charts, tables and One-Way-ANOVA multiple comparisons were used to present the findings.

3.12. Ethical consideration

Ethical consideration were maintained and respondents consents were sort at time of data collection; through explaining and seeking their consent on the importance of study findings, which should benefit and cause no harm to them. Respondents were told that their privacy and confidentiality were maintained at all times, all findings portrayed in a confidential manner and no personal or identifiable information were to be recorded or printed in the study. No names were also to be recorded during the interviewing process. Although, the research was aware that ethical issues may arise at any point during any study regardless of the rigorous planning. However, the researcher noted and acted on the importance that possible ethical issues should be identified, prevented, and reviewed as best as possible prior to, during and after the study.

CHAPTER FOUR RESULTS AND DISCUSSIONS

4.1 Results

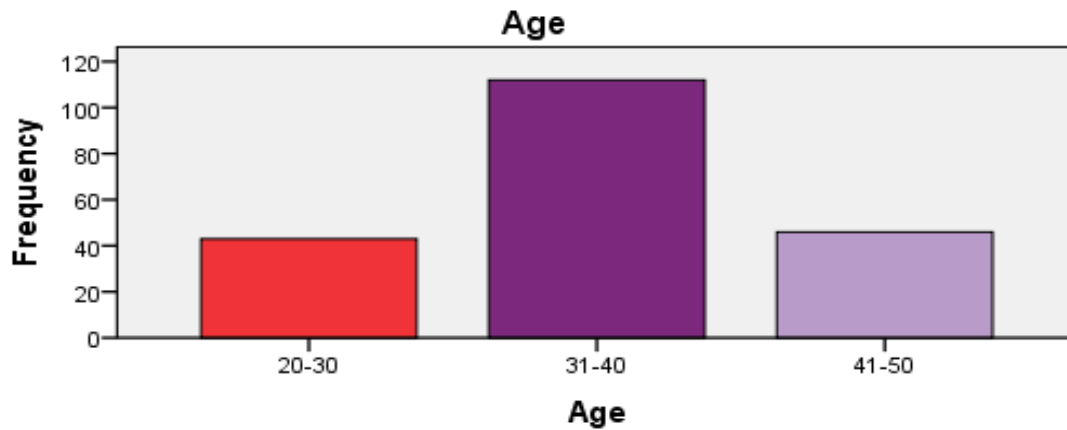
4.1.1 Proportion of respondents and Response rate

In this study a total of 233 respondents from three public universities (AAU, ASTU and JU) took part. Table 4.1 below depicts the participation level of the respondents from these three universities. From a total of 233 (100%) questionnaires distributed, 201 were properly filled out and returned, giving a response rate of 86.7%. Among them, 124(61.5%) were males and 77(38.3%) were females. 94(46.8%), 26(12.9%) and 81(40.3%) respondents were AAU, ASTU and JU library staffs respectively.

Table 4.1 General information

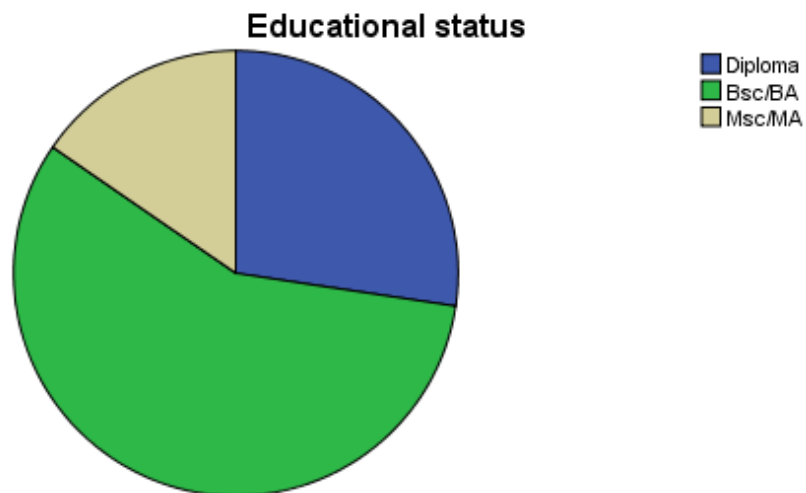
General Information		Frequency	Percent	Valid Percent	Cumulative Percent
Unive rsity Respo ndents	AAU	94	46.8	46.8	46.8
	ASTU	26	12.9	12.9	59.7
	JU	81	40.3	40.3	100.0
	Total	201	100.0	100.0	
Gender	Male	124	61.7	61.7	61.7
	Female	77	38.3	38.3	100.0
	Total	201	100.0	100.0	

Figure 4.1 Age of Respondents



From Figure 4.1, the majority 112(55.7%) respondents age were between 31-40. 46(22.9%) and 43(21.4%) respondents were 41-50 and 20-30 respectively.

Figure 4.2 Educational Statuses of Respondents



From Figure 4.2 in terms of education the majority of respondents 115 (57.2%) hold a bachelor's degree, 55(27.4%) respondents had college diploma. The remaining 31 (15.4%) of them are graduated with masters degree.

4.1.1.2 E-resource service use.

To determine whether users are using e-resources in their university, a question was asked of librarians in the university.

Figure 4.3 Use of electronic resources

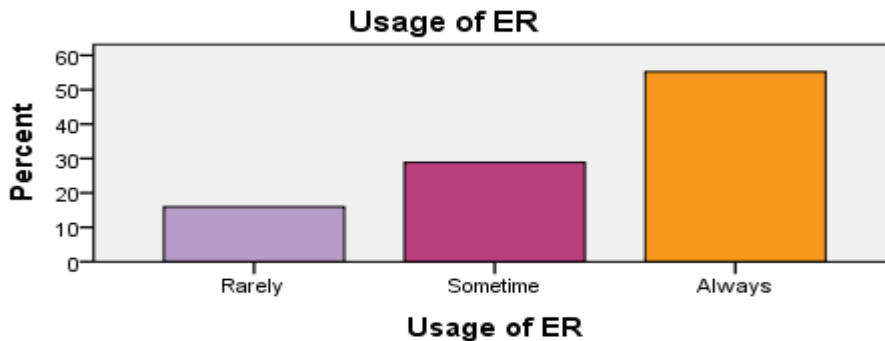


Figure 4.3 above shows that more than half of the surveyed library staff 111(55.2%) sometimes use ER. The remaining 58 (28.9%) and 32(15.9%) use ER always and rarely.

4.1.1.3 Other Institution e-resources used by respondents

Respondents were asked to state if they used other electronic resources provided by other university or institution. The responses are shown in the table below:

Table 4.2 E-resources provided by other university

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	71	35.3	35.3	35.3
Valid No	130	64.7	64.7	100.0
Total	201	100.0	100.0	

As depicted in Table 4.2, a significant majority of respondents 130(64.7%) respond they didn't use ERs provided by other universities. The remaining 71(35.3%) use ERs provided by other universities.

4.1.1.4 E-resource service provision

One of the mechanisms to determine efficiency of e-resource services is examining the extent of availability of services/resources. Respondents were asked to identify electronic resources/services which are provided by their university library. The outcome of the responses is illustrated in the table below:

Table 4..3 Electronic Service Provision

	Frequency	Percent	Valid Percent	Cumulative Percent
Library OPAC	30	14.9	14.9	14.9
Electronic Database	6	3.0	3.0	17.9
Electronic Journals	37	18.4	18.4	36.3
Electronic Books	10	5.0	5.0	41.3
All	118	58.7	58.7	100.0
Total	201	100.0	100.0	

In response to which library e-resources provide by your university, a majority 118(58.7%) of the respondents said all (Electronic Journals, OPAC, Electronic Books and Electronic Db). The remaining 30(14.9%), 6(3.0%), 37(18.4%) and 10(5.0%) said OPAC, Electronic Db, E-Journals and E-Books respectively.

4.1.1.5 Publicity of e-resources

Question was asked to librarians which mechanism prefers to use for promoting e-resource services in their library.

Table 4. 4Methods of publicity

	Frequency	Percent	Valid Percent	Cumulative Percent
Through Mail	30	14.9	14.9	14.9
Sending Letters	2	1.0	1.0	15.9
Posters and Leaflets	74	36.8	36.8	52.7
Notices on the Library Website	95	47.3	47.3	100.0
Total	201	100.0	100.0	

The respondents were asked to identify their preferred methods for promoting new or updated electronic resources in the university's library. All 95(47.3%) respondents preferred notice on the library's website. The second most preferred method was, mentioned by 74(36.8%) Posters and leaflets in the library's building. Publicity through E-mail was the third preference for 30(14.9%) respondents. 2(1.0%) respondents preferred that receive letters about new electronic resources or requests for subscription upgrades. No one was favored use on the telephone.

4.1.2 Electronic Resource Management

Electronic Resource Management requires some procedures for the purposes of improving the e-resources and services. Electronic resources such as e-journals, e-books, and databases are now a major component of library holdings. Managing these resources is both different from and more complicated than managing traditional print resources. The respondents were asked to identify the condition of ERM existed in their library. The response is illustrated in the following tables.

Table 4.5 Summary of situation electronic resource management

E-Resource Management	AAU		ASTU		JU	
	Mean	SD	Mean	SD	Mean	SD
ERMS to manage the delivery of ERs	2.49	1.045	2.46	1.104	3.00	1.118
Implementation of different methods	2.09	1.064	2.42	1.391	2.40	.971
Consultation of users about inclusion and exclusion of ERs	1.76	1.074	2.42	1.391	2.49	1.185
Collaboration with another institution	1.82	.816	2.62	1.235	2.44	1.084
Use of ERM standards	1.97	1.072	2.42	1.391	2.43	1.139

The responses for the likert scale data that was collected for this study were analyzed by using mean. According to Kenate (2013) and Gojeh et al., (2013) taking a decision on the respondents ranking of the variables, the mean of responses were guided by the scale 1.0-1.49 very low, 1.5-2.49 low, 2.5-3.49 medium, 3.5-4.49 high and 4.5-4.99 very high. From the table 4.5, we observe that the universities which have highest mean value were good in ERM relative to each other which is discussed under table 4.5. Accordingly, the use of ERMS to manage the delivery of e-resources AAU (M=2.49, SD= 1.045), ASTU (M=2.46, SD=1.104) and JU (M=3.00, SD=1.118), implementation of different methods AAU (M=2.09, SD= 1.064), ASTU (M=2.42, SD=1.391) and JU (M=2.40, SD=0.971), consultation of users about inclusion and exclusion of e-resources AAU (M=1.76, SD= 1.074), ASTU (M=2.42, SD=2.391) and JU (M=2.49, SD=1.185), institution collaboration with another institution AAU (M=1.82, SD= 0.816), ASTU (M=2.62, SD=1.235) and JU (M=2.44, SD=1.084) and use of ERM standards AAU (M=1.97, SD= 1.072), ASTU (M=2.42, SD=1.391) and JU (M=2.43, SD=1.139). From this AAU and ASTU has poor ERMS with mean (2.49 and 2.46) respectively. Whereas, JU library has medium ERMS with mean 3.00.

Table 4. 6 Anova table for electronic resource management among three universities

E-Resource Management	Significant values between universities					
	AAU		ASTU		JU	
	ASTU	JU	AAU	JU	AAU	ASTU
ERMS to manage the delivery of ERs	.993	.009	.993	.090	.009	.090
Implementation of different methods	.368	.167	.368	.993	.167	.993.
Consultation of users about inclusion and exclusion of ERs	.037*	.000*	.037*	.964	.000*	.964
Collaboration with another universities	.002*	.000*	.002*	.746	.000*	.746
Use of ERM standards	.202	.030	.202	.999	.030*	.999

Level of significant at $p \leq 0.05$

One way ANOVA was used to see whether the differences among the universities on the e-resource management. As depicted in table 4.6, variation on the use of ERMS to manage the delivery of e-resources, implementation of different methods, consultation of users about inclusion and exclusion of e-resources, institutions collaboration with another institution and use of e-resource management standards was observed among universities. This shows that electronic resource management in three libraries varies among universities.

4.1.3 Electronic Resource service deliveries.

In this section the respondents were asked their opinion on the service deliveries of e-resources. One of the mechanisms to examine the services in the university library is examining the extent of services with the satisfaction level of users from the system. The responses are shown in the following tables:

Table 4. 7 Respondents opinion about the service delivery of electronic resources in the library

Service Delivery of ERs	AAU		ASTU		JU	
	Mean	SD	Mean	SD	Mean	SD
Alphabetical or subject list	2.29	1.104	2.27	.874	3.01	1.167
Cataloguing of E-Resources(OPAC)	2.28	1.009	2.46	1.104	3.35	1.002
Linking to full text or using open URL	2.06	.902	2.69	1.158	2.51	1.002
Single Access for all Electronic Resources	2.03	1.102	2.62	1.235	2.52	1.163
Instruction or comprehensive guide	1.97	1.072	2.81	1.201	2.47	1.001
Proper channel to aware new Electronic Resources	2.10	1.048	2.62	1.235	2.70	1.078
Simple website frame	2.40	1.071	2.65	1.093	3.31	.957

Table 4.7 depicted that each university mean values, it was found that the mean value from alphabetical or subject list of e-resources were AAU (Mean=2.29 SD=1.154), ASTU (Mean=2.27, SD=0.874) and JU (Mean=3.01 SD=1.167). Cataloguing of E-Resources (OPAC) AAU (Mean=2.28 SD=1.104), ASTU (Mean=2.46, SD=1.104) and JU (Mean=3.35 SD=1.002). Linking to full text or using open URL AAU (Mean=2.06 SD=0.902), ASTU (Mean=2.69, SD=1.158) and JU (Mean=2.51 SD=1.002). Single Access for all e-resources AAU (Mean=2.03 SD=1.102), ASTU (Mean=2.62, SD=1.235) and JU (Mean=2.52 SD=1.163). Instruction or comprehensive guide AAU (Mean=1.97 SD=1.072), ASTU (Mean=2.81, SD=1.201) and JU (Mean=2.47 SD=1.001). Proper channel to aware new e- resources AAU (Mean=2.10 SD=1.048), ASTU (Mean=2.62, SD=1.235) and JU (Mean=2.70 SD=1.078). Simple website frame AAU (Mean=2.40 SD=1.071), ASTU (Mean=2.65, SD=1.093) and JU (Mean=3.31 SD=0.957). From this we can observe a library with good electronic resource management practice has good service delivery. For example, JU library has good ERMS with mean 3.00, this

result for having good service delivery, good alphabetical or subject list and cataloguing of e-resources with mean (3.01 and 3.35). Whereas, AAU and ASTU has poor ERMS with mean (2.49 and 2.46), these results for not having good service delivery, alphabetical or subject list with mean (2.29 and 2.27) and cataloguing of e-resources with mean (2.28 and 2.46) respectively. This implies that service deliveries of AAU, ASTU and JU libraries affected by electronic resource management.

Table 4.8 Anova table on service deliveries among universities

Service Delivery of e-resources		Sum of Squares	df	Mean Square	F	Sig.
Alphabetical or subject list	Between Groups	10.968	2	5.484	4.312	.015
	Within Groups	251.848	198	1.272		
	Total	262.816	200			
OPAC	Between Groups	21.665	2	10.833	9.701	.000
	Within Groups	221.091	198	1.117		
	Total	242.756	200			
Linking to full text or using open URL	Between Groups	12.578	2	6.289	6.574	.002
	Within Groups	189.402	198	.957		
	Total	201.980	200			
Single Access	Between Groups	13.207	2	6.604	5.043	.007
	Within Groups	259.280	198	1.309		
	Total	272.488	200			
Instruction or comprehensive guide	Between Groups	19.282	2	9.641	8.556	.000
	Within Groups	223.116	198	1.127		
	Total	242.398	200			
Proper channel to make users aware	Between Groups	17.366	2	8.683	7.373	.001
	Within Groups	233.181	198	1.178		
	Total	250.547	200			
Simple website	Between Groups	36.233	2	18.116	17.097	.000
	Within Groups	209.807	198	1.060		
	Total	246.040	200			

Level of significant at $p \leq 0.05$

Table 4.8 show that respondents' on service delivery among the three universities showed statistically significant differences. Accordingly, testing for variations on alphabetical or subject list ($F=4.312$; $p<0.015$), OPAC ($F=9.701$; $P<0.000$), linking to full text or using open URL ($F=6.574$; $p<0.002$); single Access for all e-resources ($F=5.043$; $p<0.007$); instruction or comprehensive guide ($F=8.556$; $p<0.000$), proper channel to make users aware ($F= 7.373$; $p<0.001$) and simple website ($F= 17.097$; $p<0.000$) among respondents in the universities surveyed revealed that statistically significant difference and this shows that service deliveries of e-resources varies among universities.

Table 4. 9Relationship between electronic resource management and electronic resource service delivery

E- Resource service deliveries	Pearson Correlation	ERMS
Alphabetical or subject list	Pearson Correlation	.344**
	Sig. (2-tailed)	.000
	N	201
Cataloguing of E-Resources(OPAC	Pearson Correlation	.377
	Sig. (2-tailed)	.000
	N	201
Linking to full text or using open URL	Pearson Correlation	.643
	Sig. (2-tailed)	.000
	N	201
Single Access for all Electronic Resources	Pearson Correlation	.688
	Sig. (2-tailed)	.000
	N	201
Instruction or comprehensive guide	Pearson Correlation	.703
	Sig. (2-tailed)	.000
	N	201
Proper channel to aware new ERs	Pearson Correlation	.716
	Sig. (2-tailed)	.000
	N	201
Simple website frame	Pearson Correlation	.610
	Sig. (2-tailed)	.000
	N	201

***. Correlation is significant at the 0.01 level (2-tailed).*

From the above table 4.9, we can see the relationship between e-resource management and service delivery have a strong, positive and significant. Relationship between OPAC and E-Resource Management System ($r(201) = .377, p = .000$); because the correlation is significant at the $p < 0.01$ level at 2-tailed. Therefore, electronic resource management has strong relationship with e-resource service delivery in Ethiopian academic libraries. This implies that without good e-resource management approach there is no good service in the library.

4.1.4 Factors that affect ERM service delivery

In this section the respondents were asked their opinion as to how significant some factors were in having a negative effect on the e-resource management for good service delivery of e-resources.

Table 4. 10 Factors that affect ERM service delivery

University of respondents		Inadequate ICT facilities	Inadequate Professional librarian	Inadequate Skilled IT Technician	Insufficient E-Resource budget	Insufficient ERs and access	Absence of ERMS	Insufficient utilization of ERs	Inadequate Network bandwidth	Lack of ERM standards
AAU	Mean	2.14	2.99	2.04	4.05	2.10	3.90	2.16	3.14	3.68
	SD	1.113	1.340	.879	1.081	1.098	1.360	1.120	1.308	1.377
ASTU	Mean	2.96	2.88	2.35	4.27	2.77	4.15	1.35	3.92	4.62
	SD	.871	.909	.485	.874	1.142	.732	.485	1.809	.496
JU	Mean	1.38	1.56	1.43	3.27	1.67	2.60	1.51	1.77	2.98
	SD	.699	.632	.631	1.747	.742	1.481	.989	1.381	1.761
Total	Mean	1.94	2.40	1.84	3.77	2.01	3.41	1.79	2.69	3.52
	SD	1.071	1.257	.817	1.425	1.034	1.501	1.061	1.614	1.562

Scale: 5=Strongly Agree (SA), 4=Agree (A), 3=Neutral (N), 2=Disagree (DA), 1=Strongly Disagree (SDA)

According to Kenate (2013) and Gojeh et al., (2013) taking a decision on the respondents ranking of the variables, the mean of responses were guided by the scale 1.0-1.49 very low, 1.5-2.49 low, 2.5-3.49 medium, 3.5-4.49 high and 4.5-4.99 very high. The respondents were asked different questions to check out the factor which affect e-resource management on service delivery of e-resources. Descriptive statistics presented in Table 4.10 show that respondents strongly agree for insufficient e-resource budget, absence of e-resource management systems and lack of e-resource management standards with mean (3.77, 3.41 and 3.52) respectively. Additionally, respondents of AAU and ASTU strongly agree for inadequate network bandwidth with mean (3.14 and 3.92) respectively. On the other hand, inadequate ICT facilities, inadequate skilled professional librarian and inadequate skilled IT technician were answered with (Mean= 1.94, Mean= 2.40 and Mean =1.84) respectively. Insufficient e-resources and insufficient

utilization of e-resources answered with (Mean= 2.01 and Mean=1.79) respectively. From this insufficient e-resource budget, absence of e-resource management systems and lack of e-resource management standards with mean (3.77, 3.41 and 3.52) affect electronic resource management on service delivery in AAU, ASTU and JU libraries.

4.1.5 Respondents Opinion

The respondents were asked on delivered e-resources. The responses are summarized in table 4.11 below:

Table 4.11 Respondents opinion on e-resource services

	Frequency	Percent	Valid Percent	Cumulative Percent
Poor	80	39.8	39.8	39.8
Good	58	28.9	28.9	68.7
Valid Very Good	27	13.4	13.4	82.1
Excellent	36	17.9	17.9	100.0
Total	201	100.0	100.0	

To find out the librarians perceptions about the service delivery of e-resources in their respective library, they were asked to give their opinion on e-resource services. The result presented in table 4.11 shows that majority of respondents 80(39.8%) were agree on poor service delivery in library, 58(28.9%) good, 27(13.4%) very good and 36(17.9%) excellent.

4.2 Qualitative Data Result

The researcher also carried out interviews with the three university library directors. It was clear that the entire library were using the internet service for providing services for their users. Respondents from JU indicated that the computers available in the library were sufficient. Whereas, AAU and ASTU respondents indicated that the computers available in the library were not enough. The respondents from AAU and JU said the university library has a wireless network. So the users do not need to come inside the library. They used from anywhere inside the university. In the case of ASTU even though they have the internet connection its speed and the number of computers in the library are insufficient.

All AAU, ASTU and JU libraries used digital library, e-database, and subscribed journals collections. All the three universities have an automated library system that only performs a cataloging function. AAU and ASTU used KOHA library automation software, whereas JU used ABCD. All respondents indicated that this library automation system is functional only locally which is not possible to use it outside the university. Even inside the compound the system is not always functional due to power and some technical difficulties.

Respondents gave several challenges that hindered successful e-resource management services. All respondents cited less electronic resource budget, high cost of IT equipments, lack of IT infrastructures and less support from high officials were the major problems. Additionally AAU and ASTU mentioned less skilled professional librarians. AAU library director said that “our library does not have well organized e-resources. He said “Of course we have some professionals but, they are not enough compared with our library services”. In addition the limited budget of e-resources, complex nature of documents and storage problem are some challenges which are influencing the library in providing good services. Therefore, to solve these problems the librarian and information scientists cannot be overlooked. The director also suggested that the university should assign enough budget to acquire e-resources, in order to satisfy users need at the right time. Additionally they are planning to digitalize print materials in order to fulfill all students, teachers and researchers interest”. AAU recently started digitalizing student researches papers.

All three library respondents indicated that their best experience in terms of management to improve e-resource service deliveries, their library has implemented Digital library (Digital contents, eBooks and e-Journals) are organized, built and accessible for users via internet in their campus network, to support the manual circulation services, their library also implemented library automation system Online Public Access Catalogue(OPAC) for patrons to use e-Catalog services to select the type of books they need to borrow from the library online and their library has implemented Institutional Repository (IR) system to collect, manage, preserve and disseminate collections of digital content generated by school, staff and students. All respondents mentioned that managing e-resource is significantly more complex than that of print world. Moreover ASTU director said that they have a reserved space for disabled students and also they developed a digital counter system for users.

For the question on what method the library management solves and corrects problems of users, all respondents indicated that, good service is one that fully meets the expectations and requirements of the users. If a library provides appropriate information to the right user at the right time and in the required form, then it could be argued to be maintaining good service. Good library services mean satisfying the question of each and every user accurately, but in digital environment, it is difficult to solve problems of users on time. Therefore our libraries try to cooperate with staff members to solve and correct problems of users. For the question what mechanisms you employ to promote the services of e-resource in your academic institution. JU library director indicated that JU library promoted e-resources on website and notices on the library building. AAU and ASTU respondents have not used permanent mechanism to promote electronic resources in their library; though they are planning to do so. For question, do you collect the user's opinion to evaluate the delivered e-resources to take the decision? In fact libraries from all universities have no plan to collect user's opinion on electronic resource services.

For the question, what are the factors that affect electronic resource management for good service delivery in your library? All three university respondents mentioned absence of e-resource management system and standard affect service deliveries of electronic resources. Additionally AAU and ASTU indicated that electronic resources need high band width for

transfer of multimedia resources but the bandwidth is decreasing from day to day due to over utilization.

For question, are the service deliveries of e-resources affected by the electronic resources management in your libraries? All respondents said “yes” Information can be delivered from the appropriate source to the end user. So service deliveries of e-resources can be affected by e-resource management. The format and nature of proposed e-resource would be a great affect on delivery of that resource. Electronic resources obtained when the user wanted just in time not just in case when there is a good e-resource management. For question, which methods are most appropriate to update new electronic resources, upgrading your subscription? In order to cooperate with publishers universities were do not have their own communication system. All universities indicated that they do not subscribe to e-journals by themselves due to high cost of subscription.

They subscribed through the help of other supporters like MOE, UNESCO, World Bank, INASP and WHO. All respondents follow other such as a subscriber send an email for new resources and national coordinator of subscriber update new resources via e-mail respectively while selecting e-resources within a year. All respondents are interested in collaborating and sharing electronic resources with other Ethiopian university libraries. Respondent from ASTU recommends “ERM would require the various types of collection development policies to be modified. Technology related factors have to be incorporated in the policy as this would affect the budgeting and selection of materials. As point of my view, all responsible bodies have more duties to improve management of e-resources for good services”.

Generally they indicated that all university officials, MOE, librarians and other responsible bodies should take responsibility for e-resource management system and to develop ERM standards for better service deliveries of e-resources. From qualitative result the researcher can said that service deliveries of electronic resources affected by electronic resource management. Some factors like absence of ERMS, standard and lack of budget affect electronic resource management in the libraries.

4.3. Discussion

Lack of ERM in academic libraries of Ethiopia needs to have required change in the way libraries operate. Libraries are now required to embrace changes on management of e-resources and services in the best way that satisfies the users that they serve.

4.3.1. Electronic Resource Management

Electronic Resource Management requires the use of methods and some procedures for the purposes of improving the e-resources and services. Electronic resources such as e-journals, e-books, and databases are now major component of library holdings. Managing these resources is both different from and more complicated than managing traditional print resources. As libraries attempted to come to terms with electronic resources, standards and methods must be developed. It is advisable for the library to develop clear methods and procedures for the management of e-resources. This will provide clarity to staff and ensure that electronic resources within the library are managed with due consideration. Table (4.5), above presents the provision of e-resource management in the three libraries. Accordingly, the use of ERMS to manage the delivery of e-resources AAU (M=2.49, SD= 1.045), ASTU (M=2.46, SD=1.104) and JU (M=3.00, SD=1.118), implementation of different methods AAU (M=2.09, SD= 1.064), ASTU (M=2.42, SD=1.391) and JU (M=2.40, SD=0.971), consultation of users about inclusion and exclusion of e-resources AAU (M=1.76, SD= 1.074), ASTU (M=2.42, SD=2.391) and JU (M=2.49, SD=1.185), institution collaboration with another institution AAU (M=1.82, SD= 0.816), ASTU (M=2.62, SD=1.235) and JU (M=2.44, SD=1.084) and use of ERM standards AAU (M=1.97, SD= 1.072), ASTU (M=2.42, SD=1.391) and JU (M=2.43, SD=1.139).The provision of e-resource management employed in these libraries need focus.

All three university libraries have not well organized e-resource management system to manage the delivery of e-resources. Accordingly, these libraries need improvement on implementation of different methods, consultation of users about inclusion and exclusion of e-resources, collaboration with other institutions and use of e-resource management standards. Especially, all university libraries need to use e-resource management standards or they must have to develop some e-resource management policies for better services.

According to (Jewell, 2001) *“Electronic resources present a number of challenges not encountered with the selection and acquisition of traditional analog materials and it is advisable for the library to use some standards and to develop clear policies/ methods for management of e-resources. This will provide clarity to staff and ensure that electronic resources within the library are developed with due consideration”*.

Consultation of users about inclusion and exclusion of e-resource is very crucial for academic libraries. As we have seen from table (4.5) the majority librarian responded their library did not consult users about e-resources. Since the main aim of library is to satisfy its users (researchers, academicians and students...), it is obvious that the main criteria's should be based on users. Metz (2000) recommend *“priority should be given to those electronic resources which offer integrity of the database; economies of scale; **benefit to the greatest number of users**; timely availability; extensive content; increased functionality; enhanced access to remote users; improved resource sharing; ease of archiving and replacing”*.

4.3.2 Electronic resource service deliveries.

Libraries now support patrons from all over the world via the internet. On the basis of analysis and interpretation of collected data, it is clear that most of the respondents from all universities possess low e-resource services as per their own assessment. Simple website frame, alphabetical or subject list of e-resources and cataloguing of e-resources (OPAC) provided in AAU and ASTU seems similar. However, the responses for alphabetical or subject list of e-resources and cataloguing of e-resources (OPAC) in JU are good than other universities. The comparison of e-resource service delivery at each university was explained under table 4.7. It was found that the mean value from alphabetical or subject list of e-resources were AAU (Mean=2.29 SD=1.154), ASTU (Mean=2.27, SD=0.874) and JU (Mean=3.01 SD=1.167). Cataloguing of E-Resources (OPAC) AAU (Mean=2.28 SD=1.104), ASTU (Mean=2.46, SD=1.104) and JU (Mean=3.35 SD=1.002). Linking to full text or using open URL AAU (Mean=2.06 SD=0.902), ASTU (Mean=2.69, SD=1.158) and JU (Mean=2.51 SD=1.002). Single Access for all e-resources AAU (Mean=2.03 SD=1.102), ASTU (Mean=2.62, SD=1.235) and JU (Mean=2.52 SD=1.163). Instruction or comprehensive guide AAU (Mean=1.97 SD=1.072), ASTU (Mean=2.81, SD=1.201) and JU (Mean=2.47 SD=1.001).

Proper channel to aware new e- resources AAU (Mean=2.10 SD=1.048), ASTU (Mean=2.62, SD=1.235) and JU (Mean=2.70 SD=1.078). Simple website frame AAU (Mean=2.40 SD=1.071), ASTU (Mean=2.65, SD=1.093) and JU (Mean=3.31 SD=0.957). From this we can observe a library with good electronic resource management practice has good service delivery. For example, JU library has good ERMS with mean 3.00, this result for having good alphabetical or subject list and cataloguing of e-resources with mean (3.01 and 3.35). Whereas, AAU and ASTU has poor ERMS with mean (2.49 and 2.46), these results for not having good alphabetical or subject list with mean (2.29 and 2.27) and cataloguing of e-resources with mean (2.28 and 2.46) respectively. This implies that service deliveries of AAU, ASTU and JU libraries affected by electronic resource management.

This finding is in agreement with Breeding (2004) states that: "One of the key jobs of the library is good service deliveries of e-resources for good access of electronic resources. As the library increases its investments in electronic resources, it's vital to provide convenient electronic resource management techniques for users to find the information they need within those resources". Libraries play crucial role in service delivering of electronic resources to users, through providing multiple services for finding resources, such as OPAC. However, the situation has changed with rapid growth of electronic resources. Beals (2010) stated that, the importance of regularly evaluating an e-resource management to determine whether it is meeting the needs of the library users or not is very crucial part in e-resource environment. As Beals writes, library's use of e-resource management has changed; e-resource management is widely integrated in the staff's workflow, with increased efficiency of service deliveries. Beals addresses issues such as developing ERMS and training staff on e-resource management for good services.

According to Rupesh and Gaurav (2011) in the era of digital libraries, library users pay more attention to electronic journals, electronic databases and electronic books. So, it is difficult to meet users' information need without proper management to deliver services. Popoola (2008) also indicated that the quality of teaching, research, and community services of any academic institutions depends on information sources and services. Identifying new ways to conceive good services are current challenges for libraries.

The primary goal of any library is to maximize user satisfaction and to potentially exceed the expectations of their users. In order to do so effectively managing a resource is an initial point for good delivery of services.

Jewell (2001); libraries create an alphabetical list for their electronic resources. However, there are other types of list which should be taken in account when delivering electronic resources, such as: subject list which means "grouping resources into different subject areas. In addition, this will increase users' success in retrieval. For example ASTU library added the subject range of electronic resources by using one term to identify the subject area of e-resources; however this could affect the understanding of the electronic resources by subject. The studied libraries are lacking in the use of some standard methods, such as Open URL. Using this could reduce the cost of using many electronic resources, and also reduce the effort required by users to find full-text articles.

Libraries use some methods to publicize electronic resources or to obtain feedback on or evaluation of existing electronic resources. There is no specific preferred method to make users aware of new electronic resources, however, as soon as the library receives the electronic resource, they should be notified quickly (Lee, S. D., and Boyle, F. 2004). The library should utilize all the available methods to publicize everything related to electronic resources, by using E-mail group lists, printed newsletters, training workshops, posters and leaflets and notification on the library's website.

4.3.3 Electronic resource service deliveries in Ethiopian Academic Libraries

The available e-resources in different universities in Ethiopia were similar in feature, purpose and objectives but differently managed in academic libraries. Table 4.8 show that respondents' on service delivery among the three universities showed statistically significant differences. Accordingly, testing for variations on alphabetical or subject list ($F=4.312$; $p<0.015$), OPAC ($F=9.701$; $P<0.000$), linking to full text or using open URL ($F=6.574$; $p<0.002$); single Access for all e-resources ($F=5.043$; $p<0.007$); instruction or comprehensive guide ($F=8.556$; $p<0.000$), proper channel to make users aware ($F= 7.373$; $p<0.001$) and simple website ($F= 17.097$; $p<0.000$) among respondents in the universities surveyed revealed that statistically significant difference and this shows that service deliveries of e-resources varies among universities.

The available e-resources in AAU, ASTU and JU were similar in feature, purpose and objectives but differently managed in libraries. As institutions realized that effective communication about their common problem of managing electronic resources could lead to satisfying solutions they began to seek discussion outside their own academic institutions. Chandler and Jewell, (2005) stated that, the “Web hub for developing administrative metadata for electronic resource management” was constructed to facilitate the sharing of information about institutions developing their own electronic resource management systems. In addition to defining the data elements, the group sought to develop workflows and promote standards for the management of electronic resources. Therefore, it is better for all Ethiopian academic libraries to collaborate/ work together for better services.

4.3.4 Relationship of electronic resource management and electronic resource services

The importance of this research lies in its attempt to evaluate ERM on service delivery of resources. From the table 4.9, we can see that the relationship between e-resource management and e-resource service delivery have a strong, positive and significant relationship. Therefore, it could be concluded that electronic resource management have strong relationship with e-resource service delivery in libraries. This will allow librarians and concerned bodies the possibility of identifying the methods of ERM provided in libraries, and accordingly, the appropriate decisions should be taken to improve ERM.

A standardized approach to e-resource management will lead to an improvement in the service delivery of electronic resources. The management of e-resources in academic libraries demands greater attention.

Blake & Collins, (2010) provides commentary on the challenges of managing electronic journal holdings in an academic library. After consulting librarians across the United States, the authors have discovered that it is difficult task to keep electronic journals up to date and organized. Managing titles and coverage dates takes numerous hours because of titles being bought and sold to different publishers, which often creates voids in journal collections as the library's rights to that information changes. The use of e-resource management system (ERMS) is helping to minimize confusion of title location and dates of coverage, but ERMS have not been adopted by all academic communities. Carpenter, T. (2010) discusses the three aspects of electronic resource management: standards, systems, and subscriptions.

Wilson (2011) discusses academic libraries adapting ERMS used to manage electronic resources acquisitions, workflows, and metadata. Stanford University adapted ERMS and centralized its electronic resources acquisitions, by way of a user-friendly interface. ERMS allow managers to keep track of the work in various sections. Also, At Eastern Kentucky University, ERMS was used to create an e-resource management with highly customizable fields.

This finding is in agreement with Lekaram (2013) the library management system and effective electronic resource provision has significant relationship. Good library management system supports effective use of electronic resources; this will help to ensure that the electronic resources are put into maximal use by the library users, thereby ensuring the achievement of the library's objective which is satisfying the users' information needs.

4.3.5 Factors affect ERM for service delivery

The respondents were asked different questions to check out the factor which affect e-resource management on service delivery of e-resources. Descriptive statistics presented in Table 4.10 shows that respondents answered for inadequate ICT facilities, inadequate skilled Professional librarian and inadequate skilled IT technician with (Mean= 1.94, Mean= 2.40 and Mean =1.84 respectively). Insufficient ER budget, insufficient ERs and absence of ERMS were scaled (Mean= 3.77, Mean=2.01and Mean=3.41respectively). On the other hand insufficient utilization of ERs, inadequate network bandwidth and lack of ERM standards were answered (Mean=1.79, Mean =2.69 and Mean=3.52). Insufficient e-resource budget, absence of ERMS and lack of ERM standards were have the highest scaled mean in all three universities. Additionally, inadequate network bandwidth also has high mean value in AAU and ASTU. Insufficient utilization of ERs was low mean value. Finding from the research indicated that e-resource management of service delivery was highly dependent on sufficient budget, e-resource management system and e-resource management standards. Libraries build their collections of electronic resources in an attempt to give their users rapid access. However, finding ways to manage and deliver electronic resources has become a major challenge to libraries.

This finding is in agreement Jewell (2001) stated that: “It is clear from the time and effort invested by many libraries creating systems for managing electronic resources, that existing library management system for important feature and functionality. Although developing systems contributes to effective practice, coordinated efforts to define needs and establish standards may prove to be of broad benefit”. Most libraries rely on finding appropriate approaches and solutions to manage electronic resources through individual or coordinated efforts. Using ERMS and standards helps to enhance better user-centered service and interoperable institutions inside and outside university. Thus, the entire interview also accepts they are not using ERMS and standards in the meantime they working on it what methods and standards they need to use. Generally, the researcher believed that there should be standards regarding e-resource management.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Electronic resources have become part of library collections in academic libraries, in view of the multiplicity of forms, sources, providers. In addition, to the emergence of new tools/techniques for organizing and delivering many modifications have to be carried out. When academic libraries are providing electronic resources for their clients the issues that must be taken into account are how the librarians are managing those resources. Libraries build their collections of electronic resources in an attempt to give their users rapid access to resources. However, finding ways to manage and deliver the library's collection of electronic resources has become a major challenge to libraries.

The rapid growth of e-resources, as well as diversity changes in users' expectation, libraries have been obliged to adjust its management to take changes into account. Since, effective coordination on management of e-resources can enhance good services to satisfy users need.

The concept e-resource is becoming very popular in the developing country, but in spite of the popularity of these new concepts, it is apparent that most library and information science practitioners in Ethiopia academic libraries are not too familiar with the concept of e-resource management in practice. According, to the result of this study electronic resource management approaches in Ethiopian academic libraries are at low level. The available e-resources in different universities in Ethiopia were similar in feature, purpose and objectives but differently managed in different academic libraries. It is quite interesting to note that at the study sites the availability of electronic resource management standards, budget, instruction or comprehensive guide, proper channel to make users aware of e- resources, and functionality of OPAC in universities were very low.

This research found out the serious need of e-resource management standard in Ethiopian academic libraries. In generally, using of e-resource management standard and proper channel to make users aware of e- resources may result a significant benefits to the library in order to increase satisfaction level of users. In addition, as library receives the electronic resource; it is good to notify quickly for users. The libraries utilize all the available methods to publicize everything related to electronic resources, by using e -mail group lists, printed newsletters, training, workshops, posters/ leaflets and notification on the library's website”.

5.1.2 Recommendations

The findings of the study seem to be very important for the library staff and the library management. Libraries have an inherent obligation to provide information service to support the teaching-learning, research activities and recreational, appropriate to the libraries' missions. Therefore, based on the findings of the study, the following recommendations are made.

The libraries should improve their methods of e-resource management by adopting electronic resource management system (ERMS).

The responsible body should take the responsibility of facilitating the development of e-resource management standards or policies. There is a need for more discussion with professional librarians and policy makers to develop e-resource management standards.

The library should use various ways to notify and inform users about available, new and updated electronic resources. The library should create a blog to advertise electronic resources, and could use some up-to-date technology, such as RSS (Really Simple Syndication) feeds, to publicize new or updated electronic resources.

The library should provide training programs in electronic resource management, as well as workshops for staff

The library should have to develop advertisement through users' telephone/mobile like Ethiopian Telecommunication Corporation. Because now a day's mobile phones are more usable. During registration of academic staff or students there is all information including phone number of that person. So, it is possible to develop such advertisement method by mobile phone and satisfy all the users.

The library should regularly evaluate its services to ensure that the service furthers the institution's goals and that the goals reflect the needs and interests of the community served, and should evaluate resources within the collection based upon professional standards and users' needs.

REFERENCES

- A.A. Oduwole, (2005) "Information technology applications to cataloguing in Nigerian university libraries", *The Electronic Library*, Vol. 23 Iss: 3, pp.289 - 294
- Aaron, L., & Marcia, S. K. (2012). Building an Electronic Resource Management (ERM) Solution at York University. *Journal of Library Innovation*, 3(2), 105.
- Abinew Ali Ayele and Screenivasarao, (2013). A Case Study of Acceptance and Use of Electronic Library Services in Universities Based on SO-UTAUT Model. *International Journal of Innovative Research in Computer and Communication Engineering*. Vol 1, Issue4.
- Adams, W.J., & Jansen, B.J. (1997). Information technology and the classroom of the future: Society for Information Technology in Education. Conference paper. Orlando, Florida
- Adeyinka, O. H. (2011). *Emergence of electronic Library Resources: A threat to librarians?* Ota: Bells University of Technology.
- Ameen Kanwal , Haider, S.J. (2007) "Evolving paradigm and challenges of collection management (CM) in university libraries of Pakistan", *Collection Building*, Vol. 26 Iss: 2, pp.54 – 58
- Aynalem Megersa and Wondimeneh Mammo. 2008. "Evaluation of the Use of PERI Resources in Academic Institutions in Ethiopia" in *Evaluating Electronic Resource Programmes and Provision Case Studies from Africa and Asia*. Rosenberg, Diana (editor.) *INASP Research and Education Case Studies*, 3; pp. 63-78.
- Ballard, R. and Lang, J. (2007). The hidden benefits of implementing an Electronic Resources Management System
- Bansode, Sadanand Y and Periera, Shamin (2009). A Survey of Library Automation in College Libraries in Goa State, India, *Library Philosophy & Practice*, 10(2), 1-7p.
- Beals, N. (2010). Revisiting Wayne State University's ERM system: Six years later. *Against the Grain*, 22(2), 20-22.
- Blake, K., & Collins, M. (2010). Controlling chaos: Management of electronic journal holdings in an academic library environment. *Serials Review*, 36(4), 242-250.
- Borgman, C. L. (2000). From Gutenberg to the global information infrastructure: access to information in the network world. Cambridge, MA: MIT Press.

- Boris F. Volodin. (2000). History of Librarianship, Library History, or Information History: A View from Russia. *The Library Quarterly: Information, Community, Policy*, 70(4), 446– 467.
- Bothmann, R.L. and Holmberg, M. (2010). Strategic planning for electronic resources management.
- Breeding, M. (2004). The Many facets of managing electronic resources. *Computers in Libraries* 24 (1) p.1-8.
- Brophy, P. (2000). Towards a generic model of information and library services in the information age. *Journal of Documentation*, 56 (2), 161-184.
- Carpenter, T. (2010). Electronic resource management standardization—Still a mixed bag. *Against the Grain*, 22(4), 84-85.
- Cays, J., & Gervits, M.. (2012). Evolving Libraries: People and Technology Collaborating to Build University Design Communities. *Art Documentation: Journal of the Art Libraries Society of North America*, 31(2), 235–244.
- Cays, John, and Maya Gervits. “Evolving Libraries: People and Technology Collaborating to Build University Design Communities”. *Art Documentation: Journal of the Art Libraries Society of North America* 31.2 (2012): 235–244.
- Curtis, D., and Scheschy, V. M. (2005). E Journals: a how-to-do-it manual for building, managing, and supporting electronic journal collections London: Facet. xvi, 421 p.
- Joint Funding Council's Libraries Review Group. (2013), Report. (*The Follett Report*). Bristol, HEFCE. Available at: <http://www.ukoln.ac.uk/follett/report/>
- Gandhi, S.. (2003). Academic Librarians and Distance Education: Challenges and Opportunities. *Reference & User Services Quarterly*, 43(2), 138–154.
- Grahame, V. & McAdam, T. (2004) Managing electronic resources : SPEC kit 282
- Hupp, S. L.. (2002). [Review of *Electronic Collection Development: A Practical Guide*]. *Reference & User Services Quarterly*, 42(2), 178–178.
- Jewel,T.D.,et al. (2004). Electronic Resource Management: *Report of DLF Electronic Resource Management Initiative*. Washington, D.C.: Digital Library Federation.
- Julian Warner. (2001). W(H)ITHER Information Science?/!. *The Library Quarterly: Information, Community, Policy*, 71(2), 243–255

- Kaduna, E. G., & Magoi, J. S. (2014). The Emergence of Digital Libraries Services in Northwest Nigerian Universities: Challenges and Prospects. *Lincoln Library Philosophy and Practice*.
- Kumar, V., & Singh, J. (2009). *Use of CD-ROMS and internet resources by the students in Jaypee University of information technology*, Himachal Pradesh. *PEARLA Journal of Library & Information Science*, 3(4), 46-52.
- L. A. Gojeh et al. (2013). Human and physical environmental factors affecting students' utilization of library and information services in colleges of education libraries in Nigeria. *American International Journal of Research in Humanities, Arts and Social Sciences*, 3(1), pp. 8-16
- Lee, S. D., & Boyle, F. (2004). *Building an electronic resource collection: A practical guide* (2nd ed.). London: Facet Publishing.
- Lokalwar, B. R., & Kapade, D. G. (2012). NAAC: Quality Enhancement in College Library. *Online Research Journal*(4).
- Maharana, Bulu, Chaudhary, D. K. and Dutta, Syamashree (2004). " Collection development in electronic information resources in the R & D Libraries of Kolkata City: a Survey". *Library Harold*. 42 (3), 235- 246.
- Mercado-Garcia, R., & Alaya-ay, G. M. (2013). The Iligan City Public Library and Services: Its Community Sectors' Awareness and Responses Virginia. *Journal of of Educational and Social Research*, 3.
- Metz ,P. (2000). Principles of Selection for Electronic Resources., *TRENDS*, Vol. 48, No. 4, pp. 711-728 © 2000 The Board of Trustees, Blacksburg University of Illinois
- Mi, J., & Sullenger, P. (2006). Examining workflows and redefining roles : Auburn University and the college of New Jersey. *The Serials Librarian* . 50 (3/4), 279-283.
- Miller, K. (2008) Service quality in academic libraries: An analysis of LibQUAL+(TM) scores and institutional characteristics. Ed.D. dissertation, University of Central Florida, United States -- Florida.
- Mitchell, A. M. & Surratt, B.E. (2005). *Cataloguing and organizing digital resources: A how-to-do-it manual for librarians*. New York, Neal-Schumn Publishers.
- Mittal, A. (1997). Changing role of librarians and information professionals in electronic information environment. *Lucknow Librarian*, 29 (1-4), 21-24.
- Moses, A., Gideon, B., & Samuel, A. (2015). Awareness and Utilization of Electronic Resources by Librarians of the Olabisi Onabanjo University. *Information and Knowledge Management*, 5.

- Mugenda & Mugenda (2003) *Research Methods*: Acts Press, Nairobi.
- Mutula, S. M. (2001) 'Internet access in East Africa'. *Library Review*, 50(1): 28–34.
- Nicholas, D., & Williams. P. (1999). The changing information environment: The impact of the internet on information seeking behaviour in the media. In T.D.
- Odunew, A. O., & Omagbemi, C. O. (n.d.). *Information Provision, and Use of Ploicymakers in Olabisi Onabanjo University*. Olabisi Onabanjo University , Ago-Iwoye.
- Odunola, I. A., & Bamidele, O. B. (2011). Availability and Accesibility of Internet Facilities in Nigerian University Libraries: A Case Study of Two Federal Universities in South West Nigeria. *Library Philosopy, and Practice*.
- Oduwole A (2004). Impact of internet use on agricultural research outputs in Nigerian universities of agriculture. *Library Hi Tech News Incorporating Online and CD Notes* , 21(6).
- Oduwole, A. A. (2005). Information technology applications to cataloguing in Nigerial university libraries. *The Electronic Library*, 23(3), 289-294.
- Okoye, M. O., & Ugwuanyi, C. F. (2012). Mangement of Electronic Resources by Cataloguers in Nigerian Federal University Libraries. *Library Philosopy and Practice*.
- Ondari-Okemwa, E. (2004) 'Impediments to promoting access to global knowledge in sub-Saharan Africa'. *Library Management*, 25(8/9): 361–75.
- Oyedun GU (2007). Internet use in the Library of Federal University of Technology, Minna: A case study. *Gateway Library Journal* 10(1): 23- 32.
- Pandita, Naina (2004). Collection development of digital era. IASLIC Golden Jubilee Publication, 1-9
- Pankhurst, R. (1995) *Libraries in Ethiopia*. Unesco Bull.for libr.24. Northeast African Studies 2: 119–133.
- Parker, K. (2007). Tools for mature management of electronic resources lifecycles in libraries.
- Pinfield, S. (2001). Managing electronic library services: Current issues in U.K. higher education institutions.
- Popoola, S.O (2008). The use of information sources and services and its effect on the research output of social scientists in Nigerian universities. *Library Philosophy and Practice*.
- Rockman, I.F. (2003). Thinking deeply about future. *Reference Services Review*, 31 (1), 7-8.

- Rosenberg D (2008). Towards the Digital Library: Findings of an investigation establish the current status of university libraries in Africa. International Network for the Availability of Scientific Publications (INASP).
- Rosenberg, D. (1998) 'IT and university libraries in Africa'. *Internet Research*, 8(1): 5–13.
- Rosenberg, D. (Ed.). (2008). Evaluating Electronic Resource Programmes and Provision Case Studies from Africa and Asia. *Research and Education Case Studies*.
- Rupesh,S. and Gaurav,k. (2011). Cloud computing in digital and university libraries. *Globe Journal of Computer Science and Technology*. [online]11(12) P- 37.
- Sadeh, T., & Ellingsen, M. (2005). Electronic resource management systems: The need and the realization. *New Library World*. 106 (5/6).
- Salanje, G. F. (2011). Creating Digital Library Collections: Prospects and Challenges for Libraries in Malawi. *International Conference on African Digital Libraries and Archives*. Johannesburg.
- Sanchez Viganu, Barbara Susana and Presno Quesada, Ileana Lourdes (2006). Collection development in a digital environment: an imperative for information organizations in the twenty first century. *Collection Building*, 25 (4), 139-144
- Sharma C., Sharma, R., & Singh, L. (2009). Information communication and technology (ICT) in research libraries of Haryana (India). *PEARL- A Journal of Library & Information Science*, 3 (4), 24-31
- Terry, Ana Arias (2000). "How today's to technology effect libraries collection choice." *Computers in libraries*. Vol. 20, No. 6, 2000; pp. 51-55.
- Tull, Crum, Davis, & Strader. (2005). *Electronic Resource Management in Libraries: Research and Practice*.
- Venkadesan, S., Jagannath, Uma and Puttabasavaiah (2004). Strategic planning and policy for collection development of e-resources to satisfy user requirements: a case study of JRD Tata Memorial Library. Paper presented in 2 nd International CALIBER-2004, held on 11-13 February, 2004 at New Delhi.
- Vohra, Ranjana (2003). Collection development and management in university libraries in the current electronic information environment. *IASLIC Bulletin*, 48(4), 224-230.
- Wilson, K. (2011). Beyond library software: New tools for Electronic Resources Management. *Serials Review*, 37(4), 294-304.
- Wilson & D.K. Allen (Ed.), *Information Needs, Seeking and Use in Different Contexts*. Proceedings of the Second International Conference on Research in Information Needs, Seeking and Use in Different Contexts, 1998 (451-462). Los Angeles: Taylor Graham Publishing.

APPENDIXES

Appendix A

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
					ERMS to manage the service delivery of e-resources Implementation of different methods to update librarians about new E-Resources Consultation of users about inclusion or exclusion of e-resources Your institution collaboration with another institution to share E-Resources Use of E-Resource Management standards	AAU ASTU JU Total AAU ASTU JU Total AAU ASTU JU Total AAU ASTU JU Total AAU ASTU JU Total			94 26 81 201 94 26 81 201 94 26 81 201 94 26 81 201 94 26 81 201

Appendix B

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
ERMS to manage the r service delivery of e-resources	Between Groups	12.925	2	6.462	5.516	.005
	Within Groups	231.951	198	1.171		
	Total	244.876	200			
Implementation of different methods to update librarians about new E- Resources	Between Groups	5.036	2	2.518	2.177	.116
	Within Groups	229.023	198	1.157		
	Total	234.060	200			
Consultation of users about inclusion or exclusion of e-resources	Between Groups	26.134	2	13.067	9.655	.000
	Within Groups	267.965	198	1.353		
	Total	294.100	200			
Your institution collaboration with another institution to share E- Resources	Between Groups	22.826	2	11.413	11.644	.000
	Within Groups	194.079	198	.980		
	Total	216.905	200			
Use of E- Resource Management standards	Between Groups	10.674	2	5.337	4.078	.018
	Within Groups	259.127	198	1.309		
	Total	269.801	200			

Appendix C

Multiple Comparisons

Dependent Variable	(I) University of respondents	(J) University of respondents	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
ERMS to manage the r service delivery of e-resources	LSD	AAU	AST	.028	.240	.908	-.45	.50
			JU	-.511*	.164	.002	-.83	-.19
		ASTU	AAU	-.028	.240	.908	-.50	.45
			JU	-.538*	.244	.028	-1.02	-.06
		JU	AAU	.511*	.164	.002	.19	.83
			ASTU	.538*	.244	.028	.06	1.02
Implementation of different methods to update librarians about new E-Resources	LSD	AAU	AST	-.338	.238	.158	-.81	.13
			JU	-.310	.163	.059	-.63	.01
		ASTU	AAU	.338	.238	.158	-.13	.81
			JU	.028	.242	.908	-.45	.51
		JU	AAU	.310	.163	.059	-.01	.63
			ASTU	-.028	.242	.908	-.51	.45
Consultation of users about inclusion or exclusion of e-resources	LSD	AAU	AST	-.668*	.258	.010	-1.18	-.16
			JU	-.739*	.176	.000	-1.09	-.39
		ASTU	AAU	.668*	.258	.010	.16	1.18
			JU	-.071	.262	.788	-.59	.45
		JU	AAU	.739*	.176	.000	.39	1.09
			ASTU	.071	.262	.788	-.45	.59
Your institution collaboration with another institution	LSD	AAU	AST	-.796*	.219	.000	-1.23	-.36
			JU	-.625*	.150	.000	-.92	-.33

to share E- Resources	ASTU	AAU	.796*	.219	.000	.36	1.23	
		JU	.171	.223	.445	-.27	.61	
		AAU	.625*	.150	.000	.33	.92	
		JU	AST	-.171	.223	.445	-.61	.27
		U	AST	-.455	.253	.074	-.95	.04
		AAU	U	-.464*	.173	.008	-.81	-.12
Use of E- Resource Management standards	LSD ASTU	AAU	.455	.253	.074	-.04	.95	
		JU	-.009	.258	.972	-.52	.50	
		AAU	.464*	.173	.008	.12	.81	
		JU	AST	.009	.258	.972	-.50	.52
		U						

*. The mean difference is significant at the 0.05 level.

Appendix D

Multiple Comparisons

Dependent Variable	(I) University of respondents	(J) University of respondents	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Alphabetical or subject list of E-Resources in website	LSD	AAU	.518*	.250	.039	.03	1.01	
		ASTU	-.225	.171	.189	-.56	.11	
		AAU	-.518*	.250	.039	-1.01	-.03	
		ASTU	-.743*	.254	.004	-1.24	-.24	
		JU	.225	.171	.189	-.11	.56	
		ASTU	.743*	.254	.004	.24	1.24	
Cataloguing of E-Resources(OPAC)	LSD	AAU	.315	.234	.180	-.15	.78	
		ASTU	-.569*	.160	.000	-.89	-.25	
		AAU	-.315	.234	.180	-.78	.15	
		ASTU	-.884*	.238	.000	-1.35	-.41	
		JU	.569*	.160	.000	.25	.89	
		ASTU	.884*	.238	.000	.41	1.35	
Linking to full text or using open URL	LSD	AAU	-.628*	.217	.004	-1.06	-.20	
		ASTU	-.442*	.148	.003	-.73	-.15	
		AAU	.628*	.217	.004	.20	1.06	
		ASTU	.186	.220	.400	-.25	.62	
		JU	.442*	.148	.003	.15	.73	
		ASTU	-.186	.220	.400	-.62	.25	
Single Access for all Electronic Resources	LSD	AAU	-.583*	.254	.022	-1.08	-.08	
		ASTU	-.487*	.173	.006	-.83	-.14	
		AAU	.583*	.254	.022	.08	1.08	
		ASTU	.097	.258	.708	-.41	.61	
		JU	.487*	.173	.006	.14	.83	
		ASTU	-.097	.258	.708	-.61	.41	
Instruction or comprehensive guide for using E-Resources	LSD	AAU	-.840*	.235	.000	-1.30	-.38	
		ASTU	-.501*	.161	.002	-.82	-.18	
		AAU	.840*	.235	.000	.38	1.30	
		ASTU	.339	.239	.159	-.13	.81	
		JU	.501*	.161	.002	.18	.82	
		ASTU	-.339	.239	.159	-.81	.13	
Proper channel to	LSD	AAU	ASTU	-.520*	.240	.032	-.99	-.05

make users aware of new E- Resources		ASTU	JU	- .608*	.165	.000	-.93	-.28
			AAU	.520*	.240	.032	.05	.99
Simple website frame to search and navigate through E- Resources	LSD	JU	JU	-.088	.245	.718	-.57	.39
			AAU	.608*	.165	.000	.28	.93
		ASTU	ASTU	.088	.245	.718	-.39	.57
			ASTU	-.250	.228	.275	-.70	.20
			JU	-.904*	.156	.000	-1.21	-.60
			AAU	.250	.228	.275	-.20	.70
ASTU	JU	-.655*	.232	.005	-1.11	-.20		
	AAU	.904*	.156	.000	.60	1.21		
		JU		.655*	.232	.005	.20	1.11

Appendix E

Dear respondents,

The aim of this research is to identify the approaches and techniques on Electronic Resource Management on service delivery of electronic resources provided by academic libraries. Part of this research is to discover the impact of the methods of delivering electronic resources which have been adopted by the library and what are the measure factors that affect the effective e-resource management and service of the selected Ethiopian academic libraries .For this reason, your cooperation in completing this questionnaire is valuable for the study. Since your response will be kept confidentially, please feel to answer all questions as genuinely as much as possible.

I. General Information

1. University of respondents AAU ASTU JU
2. Gender Male Female
3. Age 20 -30 31-40 41- 50 Over 50
4. Educational status Certificate BSc/BA Diploma MSc/MA

II. Main information

Part 1 Please tick the appropriate answer

1. Do you use Electronic Resources which are available on the internet?
 Yes No
2. How frequently do use Electronic Resources within library website?
 Always Sometimes Never Often
3. Do you use Electronic Resources provided by other universities?
 Yes No
4. Which library Electronic Resources/ services available in your institution?
 Library OPAC Electronic Database Electronic Journals Electronic Books
Other (Please Specify) _____
5. Which of the following method do you prefer to update new Electronic Resources and Upgrading your subscription?
 Through mail Through Telephone Notices on the Library Website
 Sending letters Posters and Leaflets
6. How do you rate the following elements in your library? Put an “√” mark parallel to your choice to indicate your appropriate answer. **Poor=1, sufficient=2, neutral=3, high=4 and very high=5**

No	Electronic Resource Management	5	4	3	2	1
1	E- Resource Management system to manage the delivery of E-Resources					
2	Implementation of different methods					
3	Consultation of users about inclusion or exclusion of e- resources					
4	Your institution collaboration with another institution					
5	Use of E- Resource Management standards					

Part 2 Electronic Resources management on service delivery

1. How do you rate the following elements in your library? Put an “√” mark parallel to your choice to indicate your appropriate answer. **Poor=1, sufficient=2, neutral=3, high=4 and very high=5**

No	Factors that affect service delivery of Electronic Resources	5	4	3	2	1
1	Alphabetical or subject list of E- Resources					
2	Cataloguing of E-Resources(OPAC)					
3	Linking to full text or using open URL					
4	Single Access for all Electronic Resources					
5	Instruction or comprehensive guide					
6	Proper channel to make users aware of new E- Resources					
7	Simple website frame					

Part 3 Factors that affect E- Resource Management on service delivery

1. How do you rate the following elements in your library? Put an “√” mark parallel to your choice to indicate your appropriate answer. **Poor=1, sufficient=2,neutral=3, high=4 and very high=5**

No	Factors affected E-Resource delivery	5	4	3	2	1
1	Inadequate ICT facilities (Softwares, Computers...)					
2	Inadequate Professional librarian					
3	Inadequate Skilled IT Technician					
4	Insufficient E-Resource budget					
5	Insufficient E-Resources and access					
6	Absence of E-Resource Management system					
7	Insufficient utilization of E-Resources					
8	Inadequate Network bandwidth					
9	Lack of E-Resource Management standards					

Part 4 Condition of Service deliveries

1. How do you rate the following elements in your library? Put an “√” mark parallel to your choice to indicate your appropriate answer.

Poor=1, Good=2, neutral=3, Very Good=4 and Excellent=5

No	ER Services	5	4	3	2	1
1	Easy access to E-Resources					
2	Easy find for E-Resource					
3	Availability instructions					
5	Notification of new or updated E-Resources					
6	A single access for all E-Resources					

2. How do you rate service delivery of e-resources in your library?

Poor=1 Good=2 neutral=3 Very Good= 4 Excellent=5

Thank you for your cooperation

Appendix F

COLLEGE OF NATURAL SCIENCES

DEPARTMENT OF INFORMATION SCIENCE

ELECTRONIC RESOURCE MANAGEMENT ON SERVICE DELIVERY IN SELECTED ETHIOPIAN ACADEMIC

3. An interview guide for Library Directors

Questions

1. Are there enough and well organized libraries with trained human power and necessarily e-resources that can handle all students and researchers of your Institution? If no how your staffs address the e- service for all users, what is your suggestion to solve such problems?
2. Can you tell me about your Library best experience in terms management system to improve e-resources service achievement in different aspect? If any please mention.
3. By what method the library management solves and corrects problems of users?
4. What mechanisms you employed to promote the services of e-resource in your academic institution?
5. Do you collect the user's opinions to evaluate the subscribed e-resources to take the decision, to continue or to cancel the subscription to these resources?
6. Would you be interested in collaborating and sharing e-resources with other institutions?
7. In your opinion is there any difference in service delivery and electronic resource management in your library?
8. What are the factors that caused the difference in the electronic resources management on service delivery in your library?
9. Are the service deliveries affected by the electronic resources management in your libraries?
10. Which methods are most appropriate to update you about new electronic resources, upgrading your subscription?
11. Do you have any other comments regarding to improve electronic resource management for good service delivery? Please elaborate?

Appendix G

JIMMA UNIVERSITY

COLLEGE OF NATURAL SCIENCES

DEPARTMENT OF INFORMATION SCIENCE

ELECTRONIC RESOURCE MANAGEMENT ON SERVICE DELIVERY IN SELECTED ETHIOPIAN ACADEMIC

Observation check list

Center name: _____ Subject_____

Date: _____ Total hours of observation _____

S.NO	Activities	Yes	No	Remark
1	Accessibility of electronic resources			
2	Accessibility of electronic resource services(OPAC)			
3	Availability web tools(web blogs, RSS feeds)			
4	Enough ICT infrastructure			
5	Skilled manpower			
6	E-resource organization on the system			
7	Usability of ERMS			
8	Usability of electronic resource management system			
9	Availability of manual/ instruction for e-resources services			
10	Availability ERM standards/Guidelines/Policies			
11	Accessibility of e-resources by alphabetical or subject lists			
12	Implementation of different methods/technologies			
13	Simple website frame			