

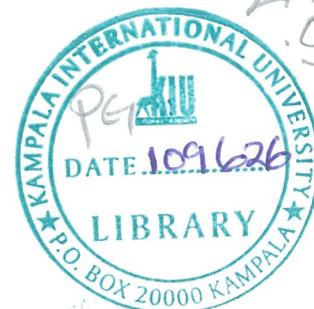
ASSESSING THE FACTORS AFFECTING EFFECTIVE UTILIZATION OF E-
LIBRARY RESOURCES AMONG STAFF AND STUDENTS OF
JIGAWA STATE COLLEGE OF EDUCATION
GUMEL, NIGERIA

BY

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1161-04246-03981

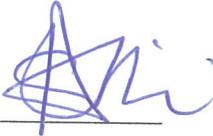
A DISSERTATION SUBMITTED TO THE COLLEGE OF HIGHER DEGREES AND
RESEARCH IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN
INFORMATION SYSTEMS OF KAMPALA
INTERNATIONAL UNIVERSITY

DECEMBER, 2018



DECLARATION

I, **ADAMU SHAFIU**, do hereby declare that this dissertation is original and has never been submitted to any other institution for any degree or diploma. Where the work of has been used, reference has been made there of.

ADAMU SHAFIU 

Name and sign of the Candidate

16/01/2019

Date

APPROVAL

This dissertation by Adamu Shafiu has been carried out under my supervision and is ready for submission to the College of Higher Degrees and Research Kampala International University.

Dr. NORA NAIROKA ODO,



Name and sign of the Supervisor

18/01/2019

Date

DEDICATION

I dedicate this dissertation to my late father Alhaji Maina, my mother Hajiya Sa'adatu Hamza, my guardians Mallam Adamu, late Alhaji Wada Maikanti Ringim and my lovely wives Khadija Sabo Baba and Maryam Iliya for their patience, perseverance, moral support and encouragement during the period of my study.

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LIST OF ABBREVIATION & ACRONYMS

| | |
|---------|---|
| AGORA | Access to Global Online Research in Agriculture |
| BA(Ed) | Bachelor of Art Education |
| BSc(Ed) | Bachelor of Science Education |
| CD-ROM | Compact- Disk Read Only Memory |
| EiFl | Electronic Information for Libraries |
| FGD | Focus Group Discussion |
| FUTA | Federal University of Technology Akure |
| HER | Higher Education Research |
| HINARI | Health InterNetwork Access to Research Initiative |
| ICT | Information and Communication Technology |
| IT | Information Technology |
| JSCOED | Jigawa State College of Education |
| KII | Key Informant Interview |
| L.G.A | Local Government Area |
| MIS | Management Information System |
| NCCE | National Commission for Colleges of Education |
| NCE | Nigeria Certificate in Education |
| NUC | National Universities Commission |
| NUNET | Nigerian Universities Network |
| NVL | National Virtual Library |
| OPAC | Online Public Access Catalogue |
| PERI | Program for Enhancement of Research Information |
| PZ | Peterson Zochonis |
| RAM | Random Access Memory |
| SPSS | Statistical Package for Social Science |
| STD | Standard Deviation |
| TAM | Technology Acceptance Model |
| TETFUND | Tertiary Education Trust Fund |
| TPB | Theory Planned Behavior |
| UAEU | United Arab Emirates University |
| UNESCO | United Nations Educational Scientific and Cultural Organisation |
| VSO | Voluntary Services Overseas |
| WBOKR | World Bank Open Knowledge Respository |
| WWW | World Wide Web |

ABSTRACT

The management of Jigawa State College of Education had made several efforts to educate both staff and students on the importance of using e-library resources. In the face of all the efforts, the utilization of the college e-library resource by the students and staff is still low. This study investigated the factors that affect the effective utilization of e-library resources among staff and students of Jigawa State College of Education, Gumel, Nigeria. The objectives of the study were (i) to examine human factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel, (ii) to determine the institutional factors that affect the utilization of e-library resources among staff and students' in Jigawa State College of Education, Gumel, (iii) to investigate the system factors affecting the utilization of e-resources among students and staff in the Jigawa State College of Education, Gumel, (iv) to propose strategies for enhancing utilization of e-library resources among staff and students in Jigawa State College of Education, Gumel. The study employs Descriptive Survey, both for quantitative and qualitative data collection. The target population was 9,063 participants and the sample size was 365 respondents. The main research instruments used were questionnaires, Focus Group Discussion as well as Key informant interviews. Quantitative data collected was analyzed using SPSS while qualitative data was also analyzed using thematic method. The study found that the human factors affecting the utilization of e-library resources include; user awareness and willingness to use e-library resources and lack of computer skills while institutional factors affecting the utilization included unstable power supply, weak internet, and insufficient facilities among others. This study has found that lack of integrated information system and limited sharing of information affects utilization. With regards to the enhancement of utilization of e-resources in the College, it was revealed that measures such as capacity building and proper orientation for staff and students, stable power supply and dedicated internet connections, provision of sufficient resources and so on were believed to be potential utilization and improvement measures according to the respondents. This study has found that user awareness and willingness to use the e-resources among both staff and students were found to be satisfactory. The study concluded that human factors, institutional factors, and system factors all affect the effective utilization of the e-library resources in the College. Eventually, this could affect teachers' productivity and students' academic performance. Therefore, the study recommends the following; provision of stable power supply and resources, capacity building training, provision of strong internet services, provision of integrated information system and provision of enough manpower etc.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter is a general introduction to the study. It includes background of the study, historical perspective, theoretical perspective, conceptual perspective, and contextual perspective. Statement of the problem, general objective of the study, specific objectives, research questions, and Scope of the study, geographical scope, theoretical scope, content scope, time scope and significance of the study and definition of key terms.

1.1 Background to the Study

Library is the heart of the educational enterprises, and also the reservoir of knowledge communicated through information resources (Adigun, Ojo, Salvador-Olayokun, Yewande, Abdulazeez, and Babatunde, 2011). Information technology transformed the entire domain of the library, such as techniques, resources and services. A few years ago, a significant revolution has been noticed in academic library, especially in electronic library regarding policy formation, acquisition, and practice. Omeluzor, and Akinwoye (2016) affirms that electronic information resources and services are acquired in libraries, to complement existing library resources to reduce pressure on print sources. They also added that, the advantage of electronic library resources is that they can be duplicated, manipulated, copied, printed, shared and distributed among library users. The e-library was introduced to the library system worldwide because of the value placed on the availability of information. The increasing acceptance of the e-library might be due to the diverse materials that they contain (Omeluzor, and Akinwoye, 2016). The options for what is available in the e-library are virtually endless as well as becoming more boundless as technology advance, which offers a wide range of online service to their users (Tamilselvan, Sevukan, Silverman, and Silva Kumar, 2013). These could be the reason why several higher institutions of learning are also in pursuit of this technological advancement so as not to be left out. Thus, this study assessed the factors affecting effective utilization of e-library resources by staff and students of Jigawa State College of education, Gumel.

1.1.1 Historical Perspective

Globally, the use of electronic resources in the libraries began with the development of computer in 1950s which facilitated information generation and dissemination in the United States and later spread to Europe and Asia (Adeniji and Babalola, 2015). Thus the development has posed challenges to libraries and information institutions in their attempt to meet the information needs of the user in the digital era. Libraries are now investing heavily in electronic resources especially academic libraries where users are exposed to various electronic resources to enhance their academic performance. This development is noticeable in the developed nations of the world like Africa, and other developing countries are still struggling to bridge the digital gap that is preventing them from the full benefits of the electronic era (Adesanya and Idogwu, 2015).

However, different efforts have been made to launch African Universities and Colleges of Education into the digital society with varying initiatives. The networked infrastructure would enable e-library to have access to free Journals and databases; for example: Access to Global Online Research in Agriculture (AGORA), Health InterNetwork to Access Research Initiative (HINARI), Higher Education Research (HER), Nigeria Virtual Library, Electronic Information for Libraries (eIFL), Program For Enhancement of Research Information (PERI) among others (Adesanya and Idogwu, 2015).

The Federal Ministry of Education of Nigeria through the National Universities Commission (NUC) and National Commission for Colleges of Education (NCCE) initiated various programs designed to launch Nigerian Universities and Colleges of Education into global information society. The development includes automation of university and college libraries using Management Information Systems (MIS) and Nigerian Universities Network (NUNET). Nigerian Universities Network aimed at developing a viable local and extensive area network in each institution (Noc, 2012). Besides, the National Board for Colleges of Education, the National Open University of Nigeria and the United Nations Educational, Scientific and Cultural Organization (UNESCO) in collaboration with Federal Ministry of Education also initiated the Virtual Library Projects in higher institutions of learning towards the improvement of library services in the country in early 2002 (Gbaje, 2007).

It is noted that effective utilization of e-library resources enhance digital conversion which can increase accessibility to users and advance availability to individuals who may not be customary clients of a library, due to geographic location or organizational link (Adesanya *et al.*, 2015).

Generally, the university libraries objectives are to support academic activities in their university communities. To achieve these, relevant resources needs to be put in place to satisfy the learning, teaching and research needs of users. According to Ani and Edem, (2012) the resources utilized in the universities libraries were mostly in printed format made up of books, journals, magazines, dissertations/thesis, and other local materials. Nevertheless, in the recent development, libraries experienced new technological transformation identified as the electronic information era being powered by Information and Communication Technology (ICT). With its capabilities in promoting and improving information services, it has helped in provision of timely information in higher learning institutions in Nigeria, and has led to the establishment of digital libraries in Nigerian Universities and Colleges (Ani, 2013). In line with this development, all Universities and Colleges in the Northwest zone, Jigawa State College of Education inclusive adopted the trend of setting up the digital libraries.

For instance, Gani and Magoi (2014) in their study on the emergence and development of digital libraries in Nigeria Universities with specific reference to Northwest Nigeria found that the benefits of the digital library included digitization of local content, wide access range of services and scholarly publishing. Their study also highlighted funding, infrastructure, and technology as challenges facing the application of digital libraries in northwest Universities and concludes that, though they are faced with numerous challenges, however, the university libraries could gradually overcome such challenges in the course of time especially through library collaboration.

1.1.2 Theoretical Perspective

This study was informed by three theories namely: Theory of Technology Acceptance Model (TAM) by (Davis, 1989), Theory Planned Behavior (TPB) by (Ajzen, 1991), and TAM2 by (Venkatesh and Davis, 2000). However, the theory that guided the study was TAM2.

TAM was developed by (Davis, 1989). The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: i) Perceived usefulness (PU) – This was defined by Davis (1989) as the degree to which a person believes that using a particular system would enhance his or her job performance; ii) Perceived ease-of-use (PEOU) He further defined this as the degree to which a person believes that using a particular system would be free from effort. TAM has been continuously studied and expanded by TAM2. Despite its frequent use, TAM has been widely criticized leading the original proposers to attempt to redefine it several times. Criticisms of TAM as a "theory" include its questionable heuristic value, limited explanatory and predictive power, triviality, and lack of any practical value (Swinerstone and Lubega, 2017).

The Theory of Planned Behavior (TPB) by (Ajzen, I. 1991) states that attitude toward behavior, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions and action.

Therefore, due to the above discrepancies in TAM, the current study was premised on TAM2 which was developed by Venkatesh & Davis (2000). Two processes, the Social Influence Processes (Subjective Norm, Voluntariness, and Image) and the Cognitive Instrumental Processes (Job Relevance, Output Quality, Result Demonstrability, and Perceived Usefulness) were integrated into this model. The two processes were considered to be crucial to the study of user acceptance. Thus, since this study was aimed to assess the utilization of e-library resources which is technology-based system, TAM2 could be the most suitable theory to underpin it based on the factors that make up this study. In other words, the extent of utilization of e-library resources which this study aimed to investigate could equally be influenced by those variables such as perceived usefulness and perceived ease of use which the theory emphasized to be essential for the acceptance of technology by users.

1.1.3 Conceptual Perspective

Abubakar and Garba, (2014) viewed utilization of electronic resources as the extent to which digital information resources and services are used for teaching, learning, and research. Moreover, academic libraries are those established in tertiary institutions such as Universities, Polytechnics, and Colleges of Education. Their primary function is to provide information resources and services that support the attainment of the broad objectives of teaching, learning and research activities of the parent institution. The State College library aimed to help improve academic programs of the college by providing relevant information to respond to the ever-increasing information demands of the users comprising of the students and staff of the College (Emenike, Udem, and Nkamnebe, 2014).

According to Irokwe, (2001) a digital library is a library that harnesses digital technologies as infrastructure to search, collect, organize, store and distribute cultural, historical and scientific information whether it is text, visual images or sound. This requires that all operations of the library are computerized. Such services include selection and acquisition, cataloguing and classification. Digital or electronic library comes into existence due to inconveniences of the traditional library system. The digital library contains resources that are either born digital or digitized resources that pass through the process of transformation from hard to soft copies. It also developed an electronic catalogue of all library materials, networking this catalogue, so that users not only in the library but also, from outside the library can access the e-resources. Moreover, the digital library includes the digitalization of locally produced information and the establishment of institutional repositories, to provide access to the scholarly material by members of the university (Irokwe, 2001).

According to Johnson, Evensen, Gelfand, Lammers, Sipe, and Zilper, (2012) an electronic library is a particular library with a collection of digital objects which includes video, audio and text materials, which is stored as electronic media formats along with the resources for organizing, storing, and retrieving the files and media in the library. The e-library can vary immensely in size and scope, and can be maintained by individuals, organizations, or affiliates. It may be housed within an established physical library building in an academic institution (Witten and Bainbridge, 2014).

Electronic library resources can be described as a digital representation of information, which can be accessed via a computerized system and computers network. Johnson *et al.*, (2012) added that electronic library resources include e-journals, e-books, e-databases, web resources, e-serials among others which are accessible in remote areas. Antelman, Lynema and Pace, (2012) viewed electronic resource as any information source that the library provides access to in a digital format. Electronic library resources are available resources that can be accessed electronically through computer-networked facilities or online library catalog such as the internet and World Wide Web (WWW), database, etc. The electronic library resources could either be subscribed to or digitized in-house. Consequently, it is designed to operate in a self-service mode where users are expected to utilize the information retrieval system of the library maximally. Libraries are using technology to improve the management of scholarly information to strengthen and speed access to academic information not held locally (Fati and Adetimirin, 2015).

However, in this study, factors influencing the effective utilization of e-library resources include human factors and institutional factors. The elements that constituted human factors are user's awareness, the perception of using e-library resources and users' ICT Skills and knowledge. On the other hand, the items that represented institutional factors include management styles and availability of e-library resources meanwhile the system factor include e-library system.

1.1.4 Contextual Perspective

The establishment of the Jigawa State College of Education Gumel as an institution of higher learning could be traced back to April 1976. It is noticeable when the then Kano state government accepted the recommendation to set up a tertiary institution that will produce qualified teachers with Nigeria Certificate in Education (NCE) who will teach in post-primary schools in the state. The creation of Jigawa state out of Kano State in 1991 automatically shifted the College to Jigawa State. The law establishing the College was promulgated in 1992. Indeed, the mission of the College which is to produce teachers with NCE who will teach in post-primary schools is still maintained. However, the School of Education in the College offers undergraduate programs in affiliation with Bayero University Kano: Courses offered are Bachelor of Arts (Education), and Bachelor of Science (Education) degree herein referred to as B.A(Ed) and BSc (Ed) (JSCOED, 2016).

The Jigawa State College of Education Gumel has a library named Babandi Muhammad library, with several sections. These sections include: Reference, Reserved, Technical, e-library, periodicals, and documentation sections (JSCOED, 2016). In 2011, Voluntary Services Overseas (VSO) International teachers' volunteer trainer placed at Jigawa State College of Education (JSCOED) in Gumel, Jigawa state of Nigeria flagged up the ICT inadequacies at the College as the major drawback to learning and development at the institution. VSO made a solid recommendation to Nigeria education program to assist the College to develop its ICT capacity and capability as a pre-requisite to teacher training development in the College. Pro-actively acting on this advice of the VSO Nigeria education program sought and secured funding from Peterson Zochonis (PZ) Cusson's foundations to assist JSCOED to build and considerably develop its ICT capabilities (Brigg, 2013).

In 2014, the Tertiary Education Trust Fund (TETFUND) provided facilities and resources for the smooth running of the e-library unit, which comprises of desktop computers, projectors, laptops, photocopying machines, servers, batteries among others (Babandi, 2016). Having acquired the needed resources, in 2016 NEWGENLIB System was established in the library and connected to the main ICT portal of the College providing access to e-library resources for academic researches to both the students and staff of the college.

At the beginning of every academic session, during the enrollment/matriculation of newly admitted students, College librarian lecture students on how to make use of the e-library resources for their effective academic performance and at the same time serves as an avenue to remind college community on the availability of the electronic resources (e-resources) and their usage in the library. The figure 1.1 shows the e-library resources system and current flow chart.

Figure 1. 1: Flow chart of e-library resources in the Jigawa state college of education library

(Source: Jigawa state college of education, ICT Unit 2018)

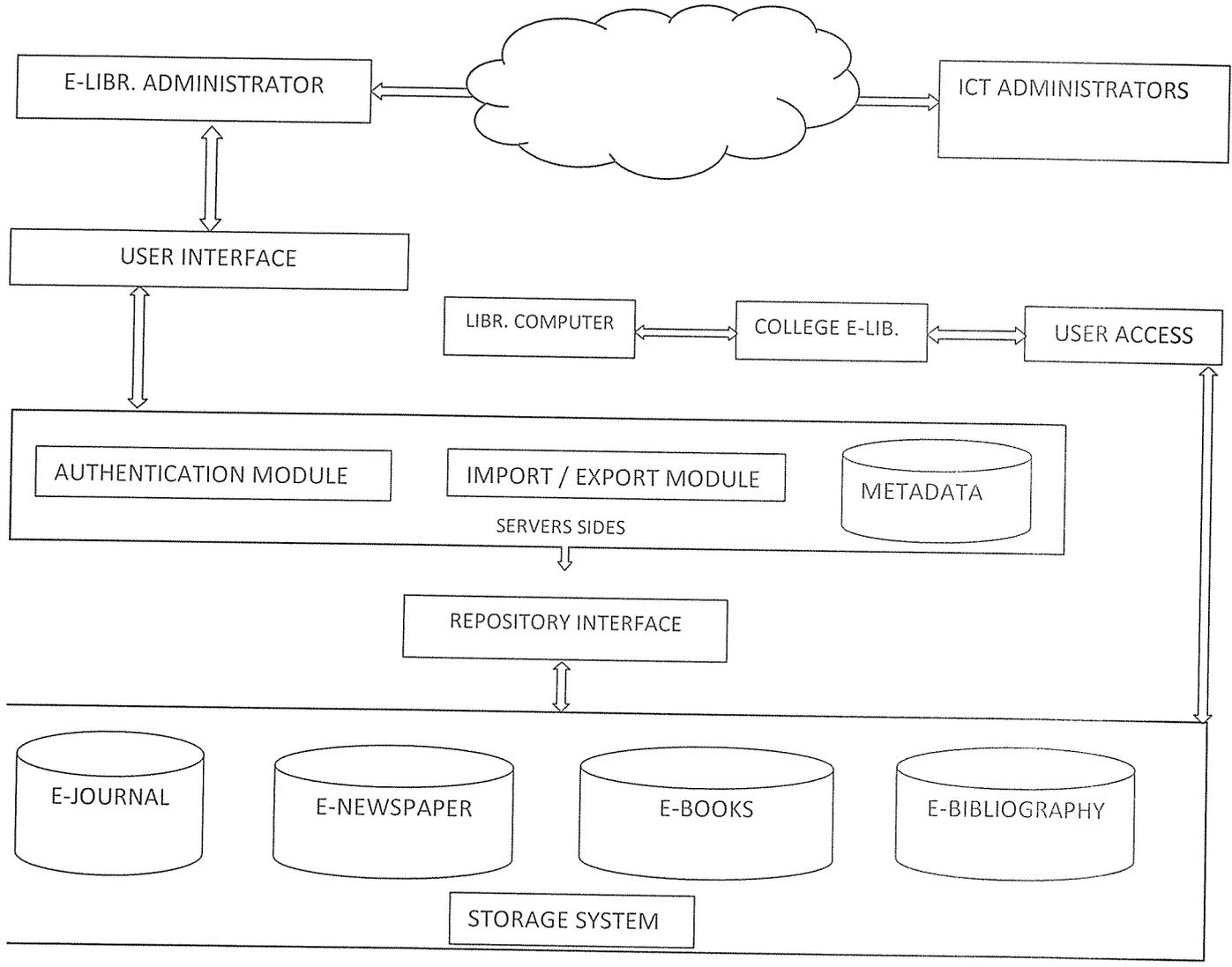


Figure 1.1 explains how the user accesses the E-Library resources in the computer library by using the internet, with E-library administrator permission. The E-library administrator is responsible for import/export E-Resources. Finally, the system administrator is responsible for monitoring all the activities in the module. The cloud in the flow chart depicts the internet which is the hub of e-resources. Every strategy to enhance the usability of e-library/resources is because

the information is domiciled on the internet. Figure 1.2, which is the map of Nigeria with an arrow in it indicates the location of the study area.

Figure 1. 2: Map of Nigeria Showing Gumel, the Study Area



Figure 1.2 shows Nigeria among the West African countries, with an area of 923,768 km². It had bordered by Benin, Cameroon, Chad, Gulf of Guinea and Niger: it also shared the maritime boundary by Ghana, Equatorial Guinea and Tome, and Principe. Nigeria has thirty-six (36) states. (<http://www.geographicguide.com/Africa-mapsNigeria.htm>).

More to that, Jigawa State is one among thirty-six (36) states of Nigeria with a total population of 4,348,649 million (2006-Census Nation Bureau of Statistics). It is situated in the north-western part of the country between latitude 11° N to 13° N and longitudes 8° E to 10.15° E. Kano state and Katsina state bordered Jigawa to the west, Bauchi state to the east and Yobe state to the northeast. To the north, Jigawa shares an international border with the Republic of Niger (Jigawa State Water Board, 2012). Most of the state's inhabitants are Hausa and Fulani. Dutse (the capital city), Gumel, Hadejia, Kazaure, and Ringim are the five (5) Emirates in the state. The study was conducted in Jigawa state college of education in Gumel Local Government Area (L.G.A). Gumel is located at Latitude: $12^{\circ} 20^m$ N to $12^{\circ} 42^m$ N and Longitude: $9^{\circ} 15^m$ E to $9^{\circ} 35^m$ E. Gumel is among the twenty-seven (27) Local Governments of Jigawa State. Gumel is located 120km north-east of Kano state and lies about 20km South of Nigerian's northern border with Niger Republic. Gumel is 564.3km from Abuja capital (Ibrahim, 1991).

1.2 Statement of the Problem

The Jigawa State College of Education Library subscribes to over five (5) e-resource packages which include: e-journals, e-newspapers, e-books, e-bibliographic database, Higher Education Research (HER, an offline e-resources book that covers a wide range of subjects) among others. Adeleke, Samuel, and Emeahara, (2016) pointed out that with e-library resources, staff and students can retrieve seemingly endless volumes of information from all over the globe in a short span of time.

The utilization of the college e-library resource by the students and staff was reported to be very low. The underutilization record of 2016 shows over 53% of the students were not efficiently utilizing the e-resources while only 35% of the teaching staff made use of e-library resources (Babandi, 2016). It implies that both the students and teaching staff utilization of e-library resources was inadequate.

The management of Jigawa State College of Education had made several efforts to educate both staff and students on the importance of using e-library resources. These efforts include conducting orientations and seminars where the newly admitted students and members of staff are enlightened on the availability of these resources in the College based on their subscription of over five (5) e-resource packages.

Despite all the over mentioned efforts by the management, the utilization of the college e-library resource by the students and staff was still low. Therefore, this study aimed at assessing the factors affecting effective utilization of e-library resources among teaching staff and students of Jigawa State College of Education, Gumel, Nigeria.

1.3 General Objective of the Study

The General objective of this study was to assess the factors affecting effective utilization of e-library resources among teaching staff and students of Jigawa State College of Education, Gumel, Nigeria.

1.3.1 Specific Objectives

1. To examine human factors that affects the utilization of e-library resources in Jigawa State College of Education, Gumel.
2. To determine the institutional factors that affects the utilization of e-library resources in Jigawa State College of Education, Gumel.
3. To investigate system factors affecting the utilization of e-library resources in the Jigawa State College of Education, Gumel.
4. To propose strategies for enhancing utilization of e-library resources in Jigawa State College of Education, Gumel

1.4 Research Questions

1. What are the human factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel?
2. What are the institutional factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel?
3. What are the systems factors affecting the utilization of e-library resources in the Jigawa State College of Education, Gumel?
4. What strategies can enhance the utilization of e-library resources in Jigawa State College of Education, Gumel?

1.5 Scope of the Study

This section presents the geographical, theoretical, content and time scope as detailed below.

1.5.1 Geographical Scope

The study was conducted in Jigawa State College of Education Gumel which is located along Kano-Hadejia-Nguru road, Gumel, Jigawa state, Nigeria.

1.5.2 Theoretical scope

The study was informed by three theories namely: Theory of Technology Acceptance Model (TAM) by (Davis 1989), Theory of Planned Behavior (TPB) by (Ajzen, 1991), and Technology Acceptance Model (TAM2) by (Venkatesh and Davis, 2000). But the theory chose to guide the study was TAM2 and literatures (See also 2.1). This choice was made, because the said theory encompasses all the variables which were aimed to be studied such as perceived usefulness which always led to utilization.

1.5.3 Content Scope

This study focused mainly on studying human, institutional and system factors affecting utilization of e-library resources in the Jigawa state college of education Gumel.

1.5.4 Time Scope

The study was conducted from the months of March 2017 - October 2018.

1.6 Significance of the Study

It is expected that, this study will be of benefit in the following ways:-

- i. Enhance awareness of e-library resources among the teaching staff and students of the College.
- ii. Will be a reference point to related studies about utilization of electronic library resources.
- iii. Provide reliable information to Jigawa State College of education management on the full utilization of electronic library resources among its staff and students.
- iv. Avail information to other academic institutions facing similar challenges.

1.7 Operational Definition of key Terms

Assessing: is an act of judging or deciding the amount, value, quality, or importance of e-library resources.

Utilization: is the extent to which electronic information resources and services are used for teaching, learning, and research.

Electronic library: refers to a particular library with a focus on the collection of full digital text and bibliographic information that is supported by information and communication technologies (ICT) facilities.

Electronic Library Resource: refers to as a digital representation of information, which can be accessed via a computerized system and computers network

Staff: apply to the lecturers working at Jigawa State College of Education, Gumel.

Students: refer to persons learning at Jigawa State College of Education, Gumel.

Librarian: a person who is in charge of the library

Users: refers to staff and students

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

The chapter covers the theoretical review and conceptual framework. It reviews other related literature under the sub-topics adopted from the objectives of the study; as the summary of the identified gap was also analyzed

2.1 Theoretical review

This study was informed by three theories namely: Theory of Technology Acceptance Model (TAM) by (Davis, 1989), Theory of Planned Behavior (TPB) by (Ajzen, 1991), and Technology Acceptance Model (TAM2) by (Venkatesh and Davis, 2000); however, TAM2 was chosen to guide the study.

2.1.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Davis in 1989; his reason for that was to predict individual adoption and use of new Information Technologies (ITs). It posits that individuals' behavioral intention to use an IT is determined by two beliefs (i) perceived usefulness: defined as the extent to which a person believes that using an IT will enhance his or her job performance and (ii) perceived ease of use: defined as the degree to which a person believes that using an IT will be free of effort (Venkatesh, *et al.*, 2003) both of which could be either human, institutional or system factors of utilization of e-library resources. It further theorizes that the effect of external variables (e.g., design characteristics) on behavioral intention will be mediated by perceived usefulness and perceived ease of use.

However, individual differences, system characteristics, social influence, and facilitating conditions are the identified constructs which determine perceived usefulness and ease of use. Individual difference variables include personality and demographics e.g. traits or states of individuals, gender, and age, that can influence individuals' perceptions of perceived usefulness and perceived ease of use. System characteristics are those salient features of a system that can help individuals to develop favorable or unfavorable perceptions regarding the value or ease of

use of a system. Social influence captures various social processes and mechanisms that guide individuals to formulate opinions of different aspects of an IT. Facilitating conditions represent organizational support that promotes the use of an IT.

According to Oluwole, (2016) postulates that, "TAM is a theory that has some limitations, scholars are doubtful about the application and theoretical precision of the model; therefore, it is persuasive to conclude that research on the Technology Acceptance Model (TAM) may have attained a saturation stage". TAM2 was developed to take the advantage of the strengths of Technology Acceptance Model (TAM) while discarding its weaknesses as noted recently by the increasing popularity of Technology Acceptance Model2 (TAM2).

2.1.2 Theory of Planned Behavior

The Theory of Planned Behavior (TPB) by Ajzen, (1991) entails that an individual's intention to engage in behavior at a specific time and place. It posits that individual behavior is driven by behavior intentions, where behavior intentions are a function of three determinants (i) an individual's attitude toward behavior (ii) subjective norms and (iii) perceived behavioral control

(i) Individual's attitude toward behavior: This refers to the degree to which a person has positive or negative feelings of the expression of interest. It entails a consideration of the outcomes of performing the behavior. This implies that if a student or staff has a positive feeling and perception towards e-library resources, he/she is most likely to utilize the library resources optimally. (ii) Subjective Norm: This also refers to a belief about whether others think he or she will achieve the behavior. It relates to a person's perception of the social media surrounding the people behavior. Regarding this study, it implies that students and staff are most likely to have the intention of using e-library resources if their peers approve of it. (iii) Perceived Behavioral Control: This refers to the individual's perception of the extent to which performance of the behavior is easy or difficult (Ajzen, 1991). It increases when individuals perceive they have more resources and confidence. This implies that users of the e-resources are more likely to make optimum use of it if they believe that the resources are easy to use or manipulate. With all the strengths the theory has in its applicability. According to Dutta-Bergman. (2005) TPB could not account for factors like fear, threat, mood and negative or positive feeling experience which have a basis in behavioral intention and motivation and assessed them in a limited fashion. It fails also

to take in to account environmental or economic factors that may influence a person intends to perform a behavior.

2.1.3 Technology Acceptance Model 2 (TAM2)

This study was anchored on The Extended Technology Acceptable Model (TAM2). Venkatesh and Davis, (2000) proposed a model referred to as TAM2. The TAM2 model added, “Theoretical constructs involving social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use).” TAM2 incorporates the subjective norm, voluntariness, and image which are three interrelated social forms. These norms help to determine if an individual will adopt or reject a new system. In addition to these three norms, Venkatesh and Davis, (2000) indicated that the cognitive determinants of perceived usefulness in TAM2 could be describes as perceived ease of use, job relevance, result demonstrability, and output quality.

This model “TAM2” indicates that, in an e-library utilization context, the direct compliance-based effect of subjective norm on intention over and above perceived usefulness (PU) and perceived ease of use (PEOU) will occur in mandatory, but not voluntary, system usage settings. In TAM2, voluntariness is therefore shown as a moderating variable. It suggests that the subjective norm positively influences image because, if an individual’s workgroup considers it essential to perform a task, e.g. using an e-library resource, completing the task elevates the individual’s image in the group. Additionally, TAM2 theorizes that direct effect of subjective norm on intentions for mandatory usage contexts will be strong before implementation and during early usage but will weaken over time as increasing direct experience with a system provides a growing basis for intentions toward ongoing use.

On the other hand, job relevance, output quality, result demonstrability, and perceived ease of use are a series of determinants of perceived usefulness in the TAM2 model. According to Venkatesh and Davis, (2000) job relevance is based on the system ability to support an individual’s job function. Output quality as an individual’s perception of how well the system performs a specific task meanwhile result demonstrability implies that individuals will have a more positive attitude about the system’s usefulness if the differences between usage and

positive results can be easily observed. Moreover, perceived ease of use examines how easy or effortless a system is to use. Venkatesh and Davis, (2000) asserted that TAM2 proposes that all cognitive instrumental processes positively influence perceived usefulness and, ultimately, an individual's intention to use an information system. Figure 2.1 shows the Technology Acceptance Model (TAM2) as presented below:

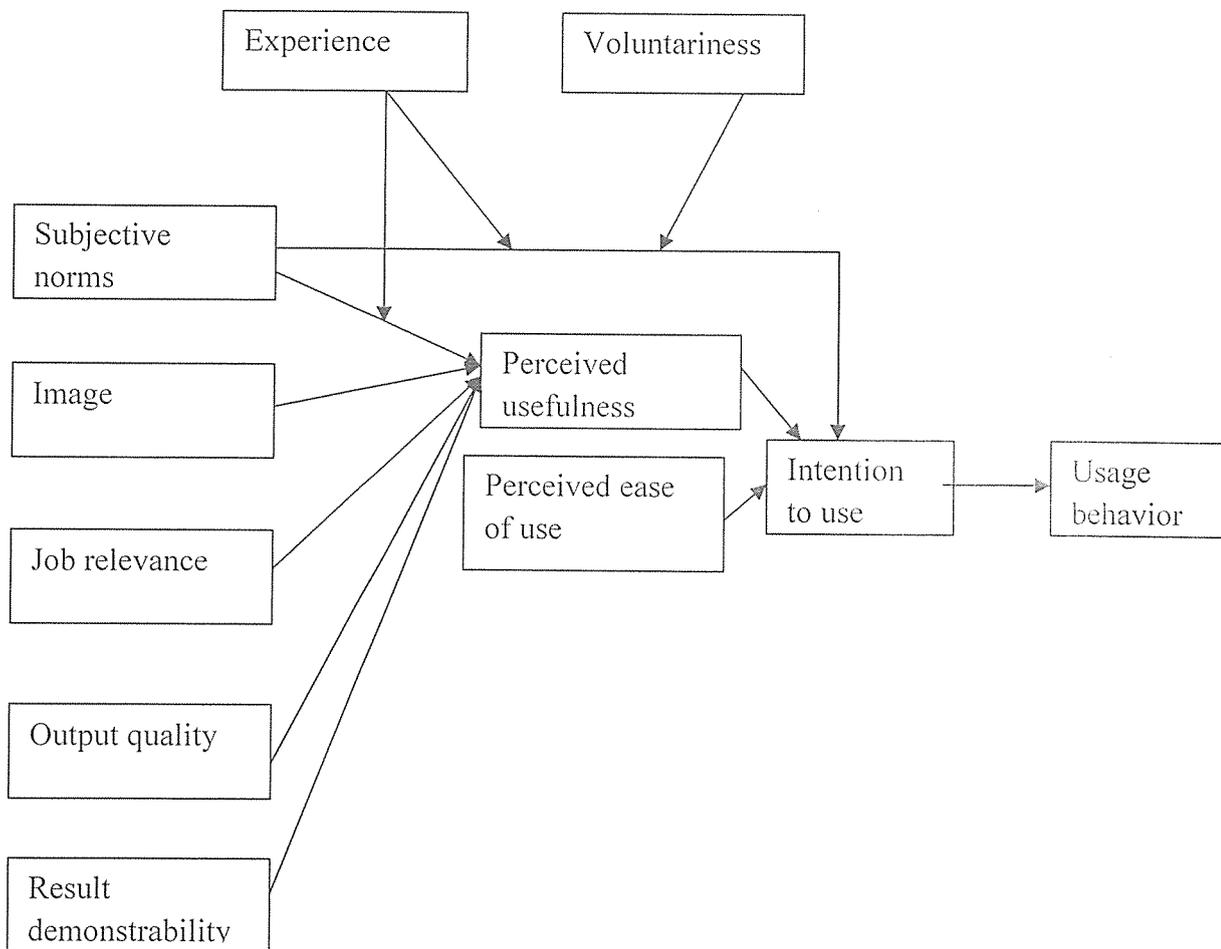


Figure 2. 1: Technology Acceptance Model (TAM 2)

(Source: Venkatesh and Devis, 2000)

2.2 Conceptual framework

The study assessed the factors affecting effective utilization of e-library resources among staff and students of Jigawa state college of education Gumel, Nigeria. A modified Conceptual framework based on the Kinengyere *et al.*, (2012) and Vankatesh and Davis, (2000) as presented in figure 2.2 below, was in this study.

The utilization of e-library resources was used by assessing Human, institutional and system factors. Subjective norms, Image, Job relevance and result demonstrability were used to moderate the factors.

Independent Variables

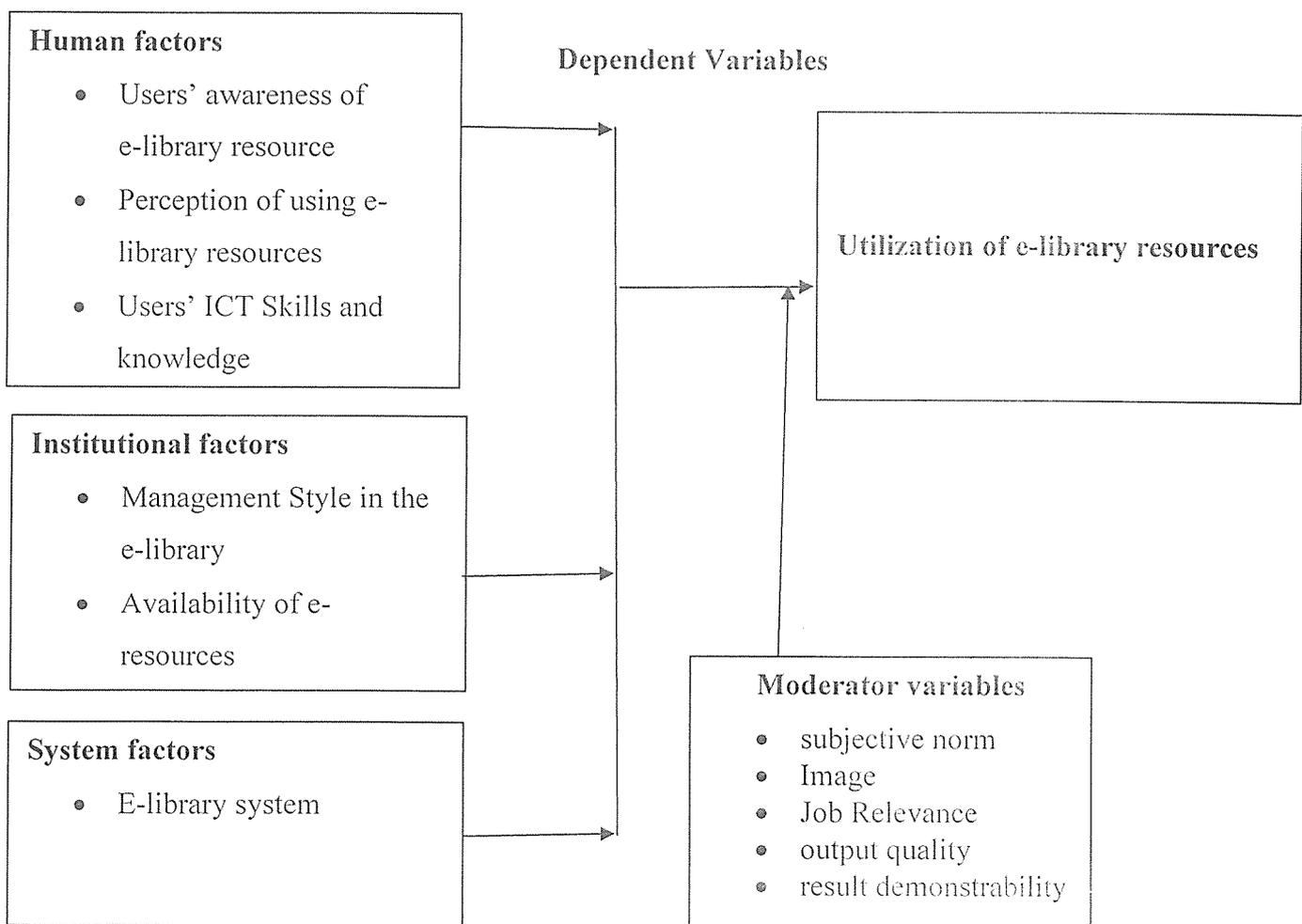


Figure 2. 2: Modified Conceptual Framework

(Adapted from Kinengyere, 2012, Vankatesh & Davis, 2000).

2.2.1: Explanation of the Framework

In this study, the TAM2 theory was used to structure the research process and help to enhance the understanding of the acceptance and uses of e-library resources at Jigawa State College of Education. In spite of its relevance and importance especially in a higher institution of learning, the utilization of e-library resources is affected by both human, institutional and system related factors.

2.3 Human Factors Affecting the Utilization of e-library Resources

Steinerova, (2001) viewed human factors as a personality of a human being in creation, mediation and use of information including complex communicative human relationships, which include awareness, Perception, ICT Skills and Knowledge of information resources.

2.3.1 Awareness of E-library Resources

In a study conducted by Dolo-Ndlwana, (2013) he discovered that most of the academic and postgraduate students at Cape Peninsula University of Technology used electronic resources and few were not using e-library resources because of the lack of awareness. Besides, Dange, Girish, Savitha, Sushma, and Veenakumari,(2013) revealed that there was significant difference between second year and final year students in their level of knowledge regarding digital information source awareness, digital information services awareness, and digital information sources usage. Also, there was a big difference between arts, science and education postgraduate student's digital information sources awareness, digital information services awareness, digital information sources usage, and digital information services usage.

In a study by Paulina, Osman and Afful-Arthur, (2014) on online electronic resources and online academic databases to investigate faculty's awareness in order to determine the benefits associated with electronic resources and the challenges they encounter in accessing the resources, it was revealed that faculty members depended highly on online electronic resources for their support of teaching. Nevertheless, patronage of the library's online academic databases was very low. This was mainly because faculty members were either not aware of the existence of these databases or were not aware that the library had subscription to these databases. In another study conducted by Aina, (2014) which studied the awareness, accessibility, and use of

electronic databases among academic staff of Babcock University, it was revealed that majority of respondents were aware of academic journals, dissertations and theses. However, the findings also revealed that some were not aware of e-resources and their importance. Similarly, Kwadzo, (2015) in his study on the awareness and usage of e-databases in geography and resource development information studies for graduate students in the University of Ghana found out that the students were aware of the availability of subscribed databases, though; awareness level was generally higher than usage. This awareness may be only a necessary condition but not sufficient for the use of library resources.

Meanwhile, Akpojotor, (2016) investigated the awareness and usage of electronic information resources among postgraduate students of library and information science in Southern Nigeria. He revealed that postgraduate students of library and information science are quite aware and highly use electronic information resources. He also reported that postgraduate students were skilled in the use of e-information resources.

2.3.2 Perception of Using E-library Resources

Perceived usefulness and perceived ease of use are the determinants of users' acceptance of digital libraries. Elhafiz, (2010) studied user and user perception of electronic resources in the United Arab Emirates University (UAEU). He measured the level of usage of e-resources between students and faculty members which revealed that lack of time is the primary factor because time is needed to focus on teaching and ineffective communication channels, so also language barrier as the second factor. In a study by Ofodile and Ifijeh. (2013) it was discovered that there was a significant relationship between library patronage of lecturers and level of awareness. The study also found out that majority of respondents used the library very frequently and most of the respondents used the library daily for class preparations, to seek information for general knowledge and specific interest.

Furthermore, in a study conducted by Adeyinka, (2015) on user's acceptance of e-library in University of Ilorin, Nigeria, it was discovered that e-library system characteristics, organizational context, and individual characteristics are variables that determine acceptance. In addition, Daramola, (2016) assessed the perception of the undergraduate students of the Federal University of Technology, Akure on the use of e-resources in the library. He revealed that the

undergraduate students who visited the e-resources unit of the University were relatively the youth with a mean age of 22 years; male students attended the e-resources more than the female students. The e-resources in FUTA library were mainly used by male students that cut across most of the schools in the University.

2.3.3 ICT Skills and Knowledge

Batool and Ameen, (2010) stated that all Librarians had word processing skills but not skillful in the computer hardware expertise that they knew how to use basic internet functions but not advance services. He also pointed out that, lack of coverage in the curriculum, lack of refresher courses, and lack of training workshops were the major problem in learning of the technology. Similarly, Safahieh and Asemi, (2012) mentioned that the majority of the librarians at Ispahan University in Iran do not have good computer skills; 46.3% regarded their level of skills as fair. None of the Librarians perceived their level of skills in an excellent grade. On the other hand, 48.8% librarians got computer training from formal IT program. He also revealed that, the computer was used in libraries more often for circulation operation and then internet online searching. But the majority of the librarians believed that computer increases the efficiency of operations.

Seena and Sudhier, (2014) investigated the awareness, skills, and attitude toward ICT among library professionals. The study revealed that the library professionals in the Kerala University Library System have relatively average level skills in the various ICT related tasks in the libraries. Libraries system software was mostly used in the libraries, and a good number of professionals indicated that the main constraint is the application of ICT in the libraries.

Mniyichel and Senait, (2015) investigated an eelectronic information literacy level and challenges among academic staff to support teaching and learning in Addis Ababa and Jimma University, Ethiopia; found out that most of the academic staff in two universities acquire information literacy skills through trial and error, guidance from library staff, assistance from other colleagues and self-taught. Further more, pointed out that the university library did not organize information literacy training on the use of electronic resources for an academic staff members. They also affirmed the training required, and the universities should consider digital information literacy training for their staffs. Hence, librarians and information professionals

should be on continuous training and retraining of academic staff on information literacy skills acquisition and adequate provision of electronic information resources in their institutions.

The examination of how students use the library and the different sources of information for their course works was conducted by Callina, (2005). The purpose of the study was to understand the difference between the first year biology and the final year biochemistry students at the University. However, more students in their final year (35%) reported that they had visited the library on a daily basis than did those in their first year.

2.4 Institutional Factors affecting the Utilization of E-library Resources

Pete, (2017) described institutional factors as a characteristic of an organization that operates as support systems of a giving organization, which may include management style, internet connectivity of ICT infrastructural systems, availability of e-resources and reliability of power supply, among others.

2.4.1 Management Style in the E-library

Esther, (2014) viewed e-library management as top personnel that is responsible for effective utilization of e-library resources, human, materials, and finance, machine and physical facilities towards the attainment of the objectives of the e-library.

Duren, (2013) carried out a study on leadership in libraries in a time of changes. He revealed that transformational and transactional leadership styles are effective especially with leader employing competent communication skills. Also, manage by objectives as a participative method can support the handling of significant changes.

According to Adetoun and Benedict, (2014) lamented on a study 'leadership challenges in the adaptation of ICT in African libraries'. It identified the need for adequate leadership style and behavior in the bid to adapt effectively to new technologies. They also found out that older library professional, many of whom are still very visible across leadership strata of libraries. Moreover, the results were found to exhibit diverse attitudes to the adaptation of ICT deployment and use in their libraries. Some library leaders and older generation professionals were discovered to react somewhat negatively to changes in technology use in their libraries. Proper

training and re-training, mentoring and harnessing the synergy of ideas, with respectful communication from future generation library professionals, was found to be desirable.

According to Halima, Barbara, & Peter, (2015) reported that the library quality management approaches which formed part of a larger project recommended a standard model of quality management for academic libraries. They found out that while the concept of quality and quality management were generally understood, the problems in the areas such as customer services and performance management could be rectified.

According to Amanuel and Laurence, (2015) viewed that most of the contributing factors to library staff turnover and retention in the academic libraries owned by the government and private owned universities in Ethiopia. They revealed that lack of organized staff development program, poor attitude of the society toward library staff, unsatisfactory salary, unequal treatment and others are the main contributing forces that triggered library professionals in changing to other professions.

2.4.2 Availability of e-resources

Oyedum, (2011) points physical facilities as one of the environmental factors that influenced the students' use of the library. An inadequate number of physical facilities such as reading chairs and tables as well as lightings resulted in low level of use of the libraries. It was more important than ever for libraries to demonstrate to students and stakeholders the value of using the libraries' resources and services.

Nimsomboon and Nagata, (2013) stated problems users encounter when they are involved in library services, and they include among others: library collections, accessibility, insufficient space, and quality of the service provided. Most problems were about the inadequate and outdated collections and inaccurate availability. The re-shelving problem was also most problematic. The users could not find the books on shelves, though they find information via online public access catalog. On the other hand, Oluwaseyi, Adetimirin and Oluwafemi, (2014) found out the availability and utilization of e-resources by undergraduate students that, the Internet was readily available while other e-resources were not readily available for assignments and research/project.

Omeluzor and Akinwoye, (2016) carried out a study of students' perception, use, and challenges of electronic information resources in the Federal University of Petroleum Resources Effurun, Nigeria. He revealed that electronic information resources are used at a different level by the respondents with e-journal, e-database, web OPAC and repositories recording high usage. It shows that users' perception influences the use of electronic information resources in academic libraries. He concluded that users' perception influences use of e-resources in academic libraries, lack of training, unreliable internet connectivity, insufficient e-resources in various study areas, unavailability of e-resources on 24/7 and difficulty of identifying relevant information to meet users' needs are challenges hindering the use of e-resources.

One of the most important and indispensable components of e-library facilities is the availability of constant and stable power supply and internet network. Gakibayo, Ikoja-Odongo & Okello-Obura, (2013) assessed the utilization of electronic information resources in Mbarara University Library by students. They found that usage of e-resources was not only affected by lack of computer skills and information literacy skills but also lack of enough computers and slow internet connectivity. The frequency of use of these resources indicated that a lot needs to be done to increase e-resource use.

Owolabi, Oluwafemi, Foluke, and Atinuke, (2016) carried out a study on utilization of electronic information resources by undergraduate students of university of Ibadan, Nigeria. They revealed that the internet services, e-mail services, online databases, electronic databases, and cybercafés were the available electronic information resources often used by the undergraduate students in the University of Ibadan. Also, the result indicated that inadequate power supply, poor network/internet connectivity and limited access to computer terminals were similarly hindering the access of the resources.

2.5 Strategies for Enhancing Utilization of E-Library Resources

The improving quality of electronic information by students is by launching and carrying out collaborative joint projects between professionals from developed countries and those from less developed countries as a way of improving information literacy skills which will enable students to acquire information retrieval skills that will allow them to exploit the massive e-resources that

are in existence today (Gakibayo *et al.*, 2013 as cited in Pejova, 2006). Also, employment of librarians, should be based on qualifications in technology applications. It would translate into a more excellent ability of students to exploit the massive technologies in academic libraries of developing countries (Gakibayo *et al.*, 2013 as cited in Omoniwa, 2010).

In the opinion of Dai, Chen, and Zhang, (2011) pointed out that there is a need for a library consortium that will ensure corporate acquisition of e-resources. It will enable financially weak University libraries to contribute to a general pool that would provide the utilization of jointly acquired ICT facilities as a means of gaining easy access for the users. Fedias, (2012) revealed that there is need to have an organized, and well-coordinated library services aimed at supporting educational activities through the provision of timely, accurate, and reliable information resources. According to Jasper, Omallah, Makwae, and Moenga, (2016) revealed that academic libraries had invested immensely in the provision of e-resources to their patrons by subscribing or purchasing them and employing trained and qualified staff to provide much-needed services.

According to Zissis and Lekkas, (2012) viewed that most of the contributing factor that influenced the staff and students to the use of e-library resources is the availability of information through the Web which enables them to be motivated to search beyond subject-disciplinary. Besides, Ali, (2005) revealed that availability of digital information networks and electronic services in recent years has helped to expand the role of E-libraries, digital information literacy and skills can significantly enhance staff and students' as well as their future academic achievement success in teaching, learning and research.

Moreover, Auer, Bizer, Kobilarov, Lehmann, Cyganiak and Ives, (2007) investigated a nucleus for a web of open data; they revealed that the user could follow further links from where they are in the web site. V-link are provided to the electronic resources for records of library information networked system, which enable user to link to internet information items that are related to the identified items. Moreover, this feature enables information seekers to interact to internet with a wide range of content on topic of interest in the absence of the identified items.

2.6 Study Gaps Identified

Many studies came across by the researcher on the utilization of e-library resources, study such as an assessment of online public access catalogue (OPAC) as retrieval information system by Adigun *et al.*, (2011); investigated factors affecting utilization of electronic health information resources in Universities in Uganda, by Kinengyere *et al.*, (2012); awareness and use of electronic information resources by the faculty members of Indian institutes in Dubai international academic city (DIAC) by Ahmad and Panda (2013); investigated the availability and utilization of e-resources by Oluwaseyi *et al.*, (2014). However, none of the above studies was conducted to comprehensively consider human, institutional and system factors hence presenting a content gap. Furthermore, none of the above studies was done in Jigawa State College, Gumel, hence presenting a contextual gap. Furthermore, most of the studies were done three years ago, however, with the digitalization that is happening globally in the library arena, such information is already obsolete hence presenting a time gap. The current study therefore was intended to provide information relevant in closing the methodology, content, contextual and time gap.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the research design, target population, sample size, sampling techniques, research instrument, validity and reliability of the instruments data collection procedure and analysis, as well as ethical considerations, limitations and delimitations of the study.

3.1 Research Design

According to Creswell and Plano (2011), a research design is a plan/strategy and procedure for conducting an investigation. It spans the decision from broad assumption to methods of data collection and analysis. This research made use of the Descriptive Survey design involving both qualitative and quantitative data collection methods (Triangulation). According to Shields and Rangarajan (2013), descriptive survey research design is an attempt to collect data from members of a population to determine the current status of that population as it relates to one or two variables. Best and Khan (1989), observed that the descriptive research is concerned with the condition or relationships that exist, such as determining the nature of prevailing conditions practices and attitudes, opinions that are held; processes that are ongoing or trends that are developed. Fraenkel and Wallen, (1990) noted that obtaining answers from a large group of people to a set of carefully designing and administered questionnaire lies in the heart of survey research. Babbie (1990) also recommended the descriptive design to generalize from a sample to a population so that inferences can be made about the characteristics, attributes or behavior of the population.

According to Amedahe, (2002) descriptive research study could either be quantitative or qualitative or both depending on the nature of the research. Data in a descriptive survey is usually collected through the use of a questionnaire, interviews, standardized tests of attainment or performance, attitude scales and observation.

3.2 Target population

The population of the study according to Amin (2005) is the entire set of objects, things and people under consideration in an investigation. In this context, the target population referred to the total number of people targeted for the study from which those who participated in the study were sampled. Thus, the target population of the study consisted of 8,823 College students and 240 academic staff, conferring to Record and Statistics Department. (2018). This gave a total of 9,063 as the population for this study. The table below serves as summary of the population.

Table 3. 1: Distribution of the Population of Staff and Students in Jigawa State College of Education

| S/N | Schools | No. of Staff | No. of Students |
|-----|--|--------------|-----------------|
| 1. | School of Education | 31 | 426 |
| 2. | School of Secondary Education Language Programme | 44 | 1971 |
| 3. | School of Arts & Social Science | 49 | 2000 |
| 4. | School of Secondary Education Vocational & Technical Programme | 30 | 900 |
| 5. | School of Early Child Care & Primary Education | 14 | 678 |
| 6. | School of Secondary Education Science Programme | 62 | 1981 |
| 7. | School of Adult, Non-Formal & Special Education | 10 | 867 |
| | Grand Total | 240 | 8,823 |

Source: Record and Statistics Department (2018)

3.3 Sample Size

Sample size refers to the number of respondents chosen to represent the entire population of the study (Amin, 2005). The rationale behind using a sample was that sample involves taking a representative selection of the population and using the data collected as research information (Frey, Botton, and Gary, 2000). In this study, the Research Advisor's table (2006) was used to determine the sample size of the respondents. The Research Advisors table (see Appendix xi) recommend the determination of a sample size after establishing the confidence level at either 95% or 99% and a margin of error of either 5% or 1%. The current study used 95% level and margin of error of 5%. Therefore, the recommended sample size for a population of 9,063 was 365 respondents. Table 3.2 gives the summary of the target population and sample size.

Table 3. 2: Target Population and Sample Size

| Category of Respondents | Target Population | Sample Size |
|-------------------------|-------------------|-------------|
| Students | 8,823 | 355 |
| Teaching staff | 240 | 10 |
| Total | 9,063 | 365 |

Source: Researcher's computation (2018) using Research Advisor table

3.4 Sampling Technique

Sampling technique mainly refers to the method employed in obtaining the sample size for the research (Onen, 2016). According to Mugenda and Mugenda (2003) sampling technique is very necessary in any social research study because it helps in answering questions pertaining to what type of respondents will be called upon to give answers to the research question, whether the selected group of respondents are adequate representative of the population, how wide a coverage would be acceptable and other questions that would help the researcher in the selection of his sampling design.

In this study, the researcher used the systematic random sampling techniques and purposive sampling techniques. The systematic random sampling technique is a type of probability sampling technique and purposive sampling technique is a type of non-probability sampling technique. In systematic random sampling technique, samples are selected using a predetermined selection point for staff and students. For instance, if 20 respondents are to be chosen using this method out of 100 respondents, then the predetermined point is every fifth respondent selected from the population such that we prefer the 5th, 10th, 15th and so on until 20 respondents are selected from the population of 100 respondents (Fred, 2009).

Purposive sampling technique involves identifying and selecting individuals or groups of individuals that are exceptionally knowledgeable about or experienced with a phenomenon of interest (Palinkas, Hurwitz, Green and Wisdom, 2015 cited in Creswell and Plano, 2011). The librarians were selected using the Purposive sampling technique.

3.5 Data Collection Methods

The data for this study was generated from primary sources (Questionnaire, Key informant Interview and Focus Group Discussion).

Data collection method refers to the process of obtaining objective evidence regarding a research problem (Best and Khan, 2006). Thus; this study used a questionnaire, Key informant interview and Focus group discussion as the data collection methods. Before the actual data collection exercise, the questionnaires were pretested (see 3.7.2). The study used questionnaire as a data collection tool which was administered to the students and the teaching staff to capture data on factors affecting effective utilization of e-library resources. Questionnaire was preferred in the study because administration is comparatively inexpensive and comfortable even when gathering data from large numbers of people spread over the wide geographic area. However, disadvantages associated with the use of a questionnaire is that the respondents may fail to fill it up or fail to return it resulting in low response rates.

On the other hand, Key informant interview method was used to collect qualitative data from some of the respondents. Key informant interview guide was addressed to only the college and system librarians to capture information about factors affecting effective utilization of e-library resources. The interview was preferred because it is useful for gaining insight and context into a topic and allows respondents to describe what is important to them. However, the demerit of the interview is that it is time-consuming and expensive compared to other data collection methods. Focus group discussion was conducted to cross-check and explains the answer in the questionnaires. This method was also administered on staff and students only involving ten (10) staff and (10) students.

3.6 Data Collection Instruments

The instruments used for this study were questionnaires, key informant interviews and focus group discussion with relevant respondents.

3.6.1 Questionnaire

A questionnaire is a device used for gathering facts, opinion, perception, attitudes, and beliefs of a more substantial number of respondents at a particular time (Amin, 2005). The questionnaire



was the main research tool for this study. A questionnaire was more comfortable to administer, less costly, and time manages (Mugenda and Mugenda, 2003).The questionnaires were administered to the students and staff of the college.

Before the actual administration of the questionnaires on the respondents, the questionnaires were pretested (see 3.7.2). This study used a four-point Likert scale adopted by McLeod, (2008) as the method of measuring attitudes, by asking people to respond to a series of statements about a topic, regarding the extent to which they agreed with them, and so tapping into the cognitive and affective components of attitudes. Two sets of questionnaires were designed for the study, for the academic staff and students. Each questionnaire was divided into two sections namely: section A captured information about the profile of the respondents; section B obtained information about human factor'(s), institutional factor(s) and Strategies on how to enhance e-library utilization.

3.6.2 Key Informant Interviews

The Informants participated in the study were two (2) librarians (One College librarian and one system librarian). Their responses were recorded using pen and paper. The researcher preferred key informant because, it helped in capturing verbal and nonverbal Questions, including body language, which can indicate a level of discomfort with the questions or indicate the level of interest for the study being discussed during the interview. The key informants were interviewed on the theme of human factors, institutional factors and system factors affecting effective utilization of e-library resources.

3.6.3 Focus Group Discussion

Focus group discussions were conducted in order to draw answers to all the four objectives of the study. This involved ten (10) staff and (10) students participants. The discussions for the two sets of the participants were conducted separately; for the staff and the students. Focus group discussion for the staff participants was conducted in the conference room of the College library where all the ten staff attended. After asking a question to the participants, each of them was allowed to respond to it one by one, and as discussion continues, the main items required were

recorded. Later, all answers recorded were transcribed and analyzed using the thematic method to select the targeted response required.

3.7 Validity and Reliability

This section consists of a process which ascertained the validity and reliability of the instruments.

3.7.1 Validity of the instruments

Validity refers to how well a test instrument measures what it is purported to be measured (Wren and J., 2017). Validity is a process of getting information from an expert in the same or similar fields to check the questionnaire, research questions or hypothesis before administering it. In line to that, the questionnaire was subjected to scrutiny by three (3) academics in the field to rate the validity of the questions. Thus, the Content Validity Index (CVI) was calculated as follows:

Validity index of the questionnaire:

Content Validity Index formula:

$$CVI = \frac{\text{Number of items rated relevant by all judges}}{\text{total number of items in the instrument}}$$
$$CVI = \frac{22}{26} = 0.85$$

Based on the above Content Validity result, the questionnaires were declared valid. Amin, (2005) noted that, if the CVI is 0.70 and above, the research instrument can then be considered valid.

3.7.2 Reliability of the instruments

Reliability of an instrument is used to measure the degree to which a research instrument would yield the same result after repeated trials (Tibenderena, 2010; De Velli, 1991). Reliability is about the accuracy and consistency of the instruments. Reliability enhances repeatability and generalizability of study findings. It includes test re-test method, split-half method, and parallel form reliability method. This study preferred to use test re-test method. In the test-retest method, the questionnaire was administered to four (4) staff and 70 student respondents and their views recorded. After a period of 10 days, the same questionnaires were administered on the same respondents for the second time and their views recorded again. Comparisons of the two sets of views were found to be very much alike. Hence, the questionnaires were considered reliable.

3.8 Data Collection Procedure

An introductory letter was obtained from the College of Higher Degrees and Research of Kampala International University (KIU), for the researcher to solicit approval to conduct the study from the College of Education, Gumel. The researcher reproduced an adequate number of questionnaires above the required sample size (365) amounted to three hundred and eighty-three(383) to take care of attrition.

During the administration of the research instruments on the selected respondents, the respondents were properly and adequately oriented on the study and how it is to be carried out. They were also guides on how to fill the questionnaires and the importance of answering every item of the survey without leaving any part unanswered. The respondents were requested to respond to the questionnaire appropriately and adhere to time.

3.9 Data Analysis

Quantitative data analysis:

After retrieving the questionnaires, the data was analyzed using Statistical Package for Social Science (SPSS). The data went through the following processes, i.e., data editing, which involved checking the filled questionnaires for any omission or mistakes, data coding which involved giving each item of the questionnaires or variable a code to be used when entering the data into the computer, and lastly data was entered into the computer for analysis. After processing (i.e., editing, coding, and entry into the computer) the collected data was analyzed. The analysis was done with the following statistical tool; frequency and percentages were used to determine the profile of the respondents while descriptive statistics, such as mean and standard deviations were used to test the average and pattern of distribution of the variables, also using SPSS. Furthermore, to compare the average responses of the student and staff to the questionnaire, a bar chart (compound) was also used.

Qualitative data analysis:

All data obtained from both key informant interview and focus group discussions data (result) was analyzed using thematic method.

Similarly, to properly interpret the mean values computed for the different study variables, the interpretation table for mean was formulated which was used in understanding mean values.

Table 3. 3: Mean Interpretation

| Scale | Mean Range | Response | Interpretation |
|-------|------------|------------------------|---------------------|
| 4 | 3.26-4.00 | Strongly Agree (SA) | Very Satisfactory |
| 3 | 2.51-3.25 | Agree (A) | Satisfactory |
| 2 | 1.76-2.50 | Disagree (D) | Unsatisfactory |
| 1 | 1.00-1.75 | Strongly Disagree (SD) | Very unsatisfactory |

Source: Researcher's computation (2018)

From the table above, mean values from 3.26 – 4.00 indicate that the respondents strongly agreed with the question put to them concerning a particular variable and was interpreted as very satisfactory. Mean values from 2.51 – 3.25 indicate that the respondents agreed with the question put to them concerning a specific variable and was interpreted as satisfactory. Similarly, mean values ranging from 1.76 – 2.50 indicate that the respondents disagreed with the question put to them and was interpreted as unsatisfactory while the least mean values of 1.00 – 1.75 indicate strong disagreement with the question put to them and was interpreted as very unsatisfactory

3.10 Ethical Considerations

After the proposal hearing and confirmation of the validity and reliability of the research instruments, an introduction letter from the College of Higher Degrees and Research of Kampala International University (KIU) was issued to seek approval to collect data from the field. Also, permission from the Management of Jigawa State College of Education, Gumel was requested and granted. Volunteer participation was voluntary that the acquisition of data. The study involved respondent's profile. Before the commencement of the study, all participants were made aware of the research significance and type of information needed. And that they were under no obligation to be coerced to participate. Their right to withdraw at any time during the survey was explicitly stated.

3.11 Limitation of the Study

Limitation refers to the things that affected the reliability of the findings of the study (Creswell, 2012). This study has an acceptance value of 0.05 or 0.01 significance level and a considerable error margin following the threat to validity.

- i. Instrument validity: the research instruments on factors affecting effective utilization of e-library were designed and reviewed by an expert (supervisor) and affirmed it to standard.
- ii. Questionnaire retrieval: the stated number of respondents was reached as some questionnaires were not returned due to circumstances beyond the researcher's control. However, the researcher tried to retrieve at least 95% of the questionnaires which is beyond the minimum return rate of 0.70% acceptable in social sciences (Amin, 2005).
- iii. The researcher had no control over the honesty of the respondents and personal biases. However, the researcher asked the respondents to be objective.
- iv. An uncooperative behavior of some respondents, un-approachable respondents and those who were reluctant to give information also limited the researcher in this study. However, the researcher mitigated this by assuring the respondents that the study was for academic intentions only and the researcher presented his university identity card and university letter permitting him to carry out the research.

CHAPTER FOUR

DATAPRESENTATION, ANALYSIS, AND INTERPRETATION OF THE FINDINGS

4.0 Introduction

This chapter presents data analysis and interpretation of the findings in accordance with study objectives. The order of presentation was follows: Response rate, Data collection analysis plan, Demographic characteristics of respondents, Human factors that affect the utilization of e-library resources, Institutional factors that affect utilization of e-library resources, system factors and Strategies for enhancing utilization of e-library resources. Analysis of the results was done differently for the different categories of respondents involved in the study that is staff and students.

4.1 Response Rate

The sample size of the study was 365 respondents comprising of 355 students and 10 teaching staff. However, out of the 365 questionnaires distributed, only 351 questionnaires were retrieved equivalent to 96% response rate. All data analysis was based on the number of questionnaires successfully recovered. According to Amin (2005), if the response rate is greater or equal to 70%, the researcher can use the data for analysis. See also Appendix III for data presentation and analysis plan.

4.2. Demographic characteristics of student respondents

This section describes the demographic profile of the student respondents under study regarding gender, age, Schools and educational level. Summary of the demographic characteristics of respondents (students) was presented in tables below.

Table 4. 1: Student Respondents' gender

| Variables | Frequency | Percent (%) |
|--------------|------------|-------------|
| Male | 266 | 78 |
| Female | 75 | 22 |
| Total | 341 | 100 |

Source: Researcher's computation (2018)

Table 4.1 shows that the majority of the respondents, 266 (78%), were male while 75 (22%) were female.

Table 4. 2: Student Respondents' age

| Variables | Frequency | Percentage (%) |
|----------------|-----------|----------------|
| 15-20 | 12 | 3.5 |
| 21-25 | 47 | 13.8 |
| 26-30 | 232 | 68.0 |
| Above 30 years | 50 | 14.7 |
| Total | 34 | 100.0 |

Source: Researcher's computation (2018)

Table 4.2 shows that majority, 232 (68%), of the respondents were within the age group of 26-30 years, followed by 50 (14.7%) who were above the age of 30 years; while the respondents within the age group of 21-25 years and 15-20 years were represented by 47 (13.8%) and 12 (3.5%), respectively.

Table 4. 3: Student Respondents' according to schools

| Variables | Frequency | Percentage (%) |
|---|------------|----------------|
| School of Education | 22 | 6.5 |
| School of Secondary Education, Language Program | 33 | 9.7 |
| School of Art and Social Sciences | 108 | 31.7 |
| School of Adult, Non-Formal and Special Education | 46 | 13.5 |
| School of Secondary Education, Vocational and Technical Education programme | 70 | 20.5 |
| School of Child Care and Primary Education | 29 | 8.5 |
| School of Secondary Education and Science Program | 33 | 9.7 |
| Total | 341 | 100.0 |

Source: Researcher's computation (2018)

Table 4.3 shows that majority, 108 (31.7%), of the respondents were from the school of Art and Social Sciences while the least percentage was a school of education with 22 (6.5%). Schools of

Secondary Education, Language Programme, Adult Non Formal and Special Education, Secondary Education, Vocational and Technical Education, Child Care and Primary Education as well as that of Secondary Education and Science Programme were represented by 33 (9.7%), 46 (13.5%), 70 (20.5%), 29 (8.5%) and 33 (9.7%), respectively.

Table 4. 4: Educational level of the Student respondents

| Variables | Frequency | Percentage (%) |
|--------------|------------|----------------|
| Pre-NCE | 31 | 9.1 |
| NCE | 202 | 59.2 |
| BSc (Ed) | 66 | 19.4 |
| BA (Ed) | 42 | 12.3 |
| Total | 341 | 100.0 |

Source: Researcher's computation (2018)

Table 4.4 shows that majority, 202 (59.2%), of the respondents were at the level of NCE i.e. their educational qualification, followed by 66 (19.4%) who were at the level of BSc (Ed); while those at the level of BA (Ed) and Pre-NCE were represented by 42 (12.3%) and 31 (9.1%), respectively.

Table 4.5: Current year of the student respondents

| Variable | Frequency | Percentage (%) |
|--------------|------------|----------------|
| Year One | 48 | 14.1 |
| Year Two | 66 | 19.4 |
| Year Three | 182 | 53.4 |
| Year Four | 45 | 13.2 |
| Total | 341 | 100.0 |

Source: Researcher's computation (2018)

Table 4.5 shows that the majority of the respondents, 182(53.4%), were in the year three of their studies, followed by 19.4% who were in their year two of studies; while the respondents who were in their year one and year four were represented by 48 (14.1%) and 45 (13.2%), respectively.

4.3 Demographic characteristics of staff respondents

This section describes the demographic data of the staff respondents under study regarding gender, age, Schools, educational level, and work experience. Summary of the demographic characteristics of respondents (staff) was presented in tables below.

Table 4. 6: Staff Respondents' gender

| Variable | Frequency | Percentage (%) |
|----------|-----------|----------------|
| Male | 8 | 80 |
| Female | 2 | 20 |
| Total | 10 | 100 |

Source: Researcher's computation (2018)

Table 4.6 shows that majority of the staff respondents were male which had the highest frequency of 8 (80%) while the female respondents constituted the remaining 2 (20%).

Table 4. 7: Staff Respondents' age

| Variable | Frequency | Percentage (%) |
|--------------------|-----------|----------------|
| 20 – 29 years | 1 | 10 |
| 30 – 39 years | 3 | 30 |
| 40 – 49 years | 4 | 40 |
| 50 years and above | 2 | 20 |
| Total | 10 | 100 |

Source: Researcher's computation (2018)

Table 4.7 shows that majority, 4 (40%), of the staff respondents were within the age group of 40-49 years, followed by 3 (30%) who were within the age group of 30-39 years, while those age group of 20-29 years and above 50 years were presented by 1 (10%) and 2 (20%), respectively.

Table 4. 8: Schools of the staff respondents

| Variables | Frequency | Percentage (%) |
|---|-----------|----------------|
| Education | 1 | 10 |
| Secondary Education Language Programme | 2 | 20 |
| School of Arts and Social Sciences | 3 | 30 |
| School of Adults, Non-formal and Special education | 1 | 10 |
| Secondary Education, Vocational and Technical Education Programme | 1 | 10 |
| School of Child Care and Primary Education | 1 | 10 |
| Secondary Education and Science Programme | 1 | 10 |
| Total | 10 | 100 |

Source: Researcher's computation (2018)

Table 4.8 shows that majority, 3 (30%), of respondents were from the School of Art and Social Sciences while the least percentage represents School of Education, School of Adult, Non Formal and Special Education, and School of Child Care and Primary Education, and School of Science with 1 (10%)each.

Table 4. 9: Educational level of the staff respondents

| Variable | Frequency | Percentage (%) |
|-------------------|-----------|----------------|
| Bachelors' degree | 4 | 40 |
| Masters' degree | 5 | 50 |
| PhD | 1 | 10 |
| Total | 10 | 100 |

Source: Researcher's computation (2018)

Table 4.9 shows that majority, 5 (50%), of the respondents were Master Degree Holders, followed by 4 (40%) who were Bachelor Degree Holders. Respondents who were Ph.D. Holders constituted only 1 (10%).

Table 4. 10: Working experience of the staff respondents

| Variable | Frequency | Percentage (%) |
|--------------------|-----------|----------------|
| 1 – 5 years | 2 | 20 |
| 6 – 10 years | 3 | 30 |
| 11 – 15 years | 3 | 30 |
| More than 15 years | 2 | 20 |
| TOTAL | 10 | 100 |

Source: Researcher's computation (2018)

Table 4.10 shows that the staff respondents with 30% were those in between 6-10 and 11-15 years of working experiences, so also those having working experience of 1-5 and more than 15years constituted 20% each.

4.4 Human factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel.

This is in line with study objective one. Quantitative and Qualitative data obtained in respect of this objective is presented below.

Table 4. 11: Students' questionnaire responses on human factors affecting utilization of e-library resources (n=341)

| Questions | SA | A | D | SD | Mean | Std |
|--|------------|------------|-----------|------------|------|-------|
| User awareness about the e-library resources is very essential for effective utilization | 120(35.2%) | 189(55.4%) | 10(2.9%) | 22(6.5%) | 3.19 | 0.777 |
| User willingness in using the e-library resources play a significant role | 96(28.2%) | 215(63%) | 17(5%) | 13(3.8%) | 3.16 | 0.679 |
| The e-library resources are user-friendly and easy to manipulate | 38(11.1%) | 115(33.7%) | 90(26.4%) | 98(28.7%) | 2.27 | 0.999 |
| Locating and sourcing of information is faster and easier on e-library resources than a conventional library | 124(36.2%) | 215(62.7%) | 2(0.6%) | 0(0.0) | 3.35 | 0.545 |
| E-library resources are usually manipulated by more skilled user only | 62(18.2%) | 151(44.3%) | 88(25.8%) | 40 (11.7%) | 2.69 | 0.903 |
| Average mean | | | | | 2.92 | 0.781 |

Source: Researchers' computation (2018)

Keys:

SA (Strongly Agree), A (Agree), D (Disagree), SD (Strongly Disagree)

Although some of the student respondents disagreed that user awareness and user willingness could influence utilization of e-resources, 35.2% strongly agreed with the question while others 55.4% agreed with it. A total of 28.2% of the respondents also strongly agreed that user willingness could influence the effective utilization of e-resources while 63.0% agreed with it. Thus, it can be said the respondents agreed with the two questions put to them with the mean and standard deviation ($3.19 \pm .777$ and $3.16 \pm .679$). Although a good number of the respondents 26.4% disagreed, 28.7% strongly disagreed with the question that e-resources are user friendly, 11.1% strongly agreed, 33.7% agreed that the e-resources were user-friendly with

mean and standard deviation (2.27± .999). Combined percentages of those who strongly agreed and those who agreed that locating and sourcing information is faster in e-library than in conventional library constitute (98.9%) indicated that the item got a wider acceptance from the respondents. However, 0.6% disagreed with the question put to them. Also agreed with the student respondents; strongly agreed constitutes 18.2%, and agreed constitute 44.3% with mean and standard deviation (2.69 ± .903) was that those with more computer skills usually used the e-library resources. However, a good percentage of respondents 25.8% disagreed, 11.7% strongly disagreed, with mean and standard deviation (2.69±0.903).

Table 4. 12: Staff questionnaire responses on human factors affecting utilization of e-library resources (n=10)

| Questions | SA | A | D | SD | Mean | Std |
|--|--------|---------|---------|--------|------|-------|
| User awareness about the e-library resources is very essential for effective utilization | 6(60%) | 4(40%) | 0(0%) | 0(0%) | 3.60 | 0.516 |
| User willingness in using the e-library resources play a significant role | 3(30%) | 7(70%) | 0(0%) | 0(0%) | 3.30 | 0.483 |
| The e-library resources are user friendly and easy to manipulate | 5 50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | 0.527 |
| Locating and sourcing of information is faster and easier on e-library resources than conventional library | 5 50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | 0.527 |
| E-library resources are usually manipulated by more skilled user only | 2 20%) | 6 (60%) | 2 (20%) | 0 (0%) | 3.00 | 0.666 |
| Average mean | | | | | 3.38 | 0.544 |

Source: Researcher's computation (2018)

Table 4.12above shows that 60% of the respondents strongly agreed while the remaining 40% agreed that user awareness was essential for effective utilization of e-resources with mean and standard deviation (3.60± 0.516) while other 30% strongly agreed and 70% agreed that user willingness also plays vital role in the utilization of e-resources with mean and standard deviation (3.30± .483). None of the respondents disagreed with the two questions put to them. Similarly, the respondents also agreed that the e-resources were user friendly 50% strongly

agreed, 50% agreed, with mean and standard deviation (3.50±.527); Locating and sourcing of information was also unanimously accepted by the respondents that e-library resources is faster and easier than the conventional library 50% strongly agreed, 50% agree, with mean and standard deviation(3.50±0,527). None of the respondents disagreed with the two questions put to them. Although 20% of the respondents disagreed that the skilled users usually manipulated the e-library, 20% of the respondents strongly agreed while 60% agreed with the question put to them with the mean and standard deviation (3.00±.666).

In a qualitative survey, key informant interviews (KIIs) were asked the following question: How do you assess the awareness of e-library by staff and students in the College? Their responses were summarized as below:

Yes staff and students of the College are fully aware of the e-library resources in the College. Moreover, they do not utilize it frequently which calls for orientation programmes to sensitize them.

Awareness through library orientations and inductions. The main objective of awareness is to introduce the students to the physical plant of the library, its policies and procedures as well as its resources and services, furthermore, learners do not use the online library because they do not know the existence of the website there is need for the College to improve more on its orientations programme to both staff and students about the enormous importance of library website in teaching and learning activities

I see that the level of awareness of the e-library resources among most of the students and some few teaching staff is low. So many of the students still prefer to go to the conventional library and use printed materials to seek for information about their studies, due to the non-awareness of its applications and simplicity.

Furthermore, the researcher asked the KIIs the following question: How do you assess the utilization of e-library resources by both the staff and students of the College? Their responses were summarised as below:

I believe the level of utilization of the e-library resources among staff and students is low. Despite the large number of students in the College, when one goes to the e-library section only very few users could be seen using it. Even among the teaching staff, the level of the utilization is not appreciable.

The e-library resources are being utilized by the staff and students in the College especially the teaching staff but not to the optimum because most often you hear staff and students complaining of not visiting the e-library section due to lack of basic computer skill.

Some students and teaching staff have a negative attitude towards using e-library resources, for the simple reason they are more familiar with the use of the conventional library, consider it easier than using e-library resources. And as you know, change is not an event it is in process.

Furthermore, Focus Group Discussion was also administered and integrated in an attempt to answer the first objective of the study. Both staff and student respondents were subjected to Focus Group discussions using the same questions. Hence, the first question asked the discussants was: What assistance do you need to enable you make use of the different e-resources in the library? Their responses were summarized as below:

Response to the question:

I think the best assistance I will need is that of orientation/skill on how to effectively use the e-library resources, because most of us are not computer literate, so for that we shy away from it.

The students do not waste time for using e-library resources, thus, this kind of students needs to be oriented and trained on the importance of learning by the use of the e-library resources.

So many teaching staff and students have limited computer skills to make effective use of the e-library resources thus, they need proper orientation and training in computer skills in order to enable them to make full utilize the e-library resources as expected of them.

In general, a summary of the responses of the participants in the focus group discussions with regards to the assistance they will require in order to make optimum use of the e-library resources showed that they need nothing more than orientation and training on how to use the e-library resources.

Furthermore, KIIs were asked the following question: How is it easy to make use of the different e-resources in the library? Their responses were summarised as below:

The e-library resources are not so difficult to use but require basic computer skills for operations.

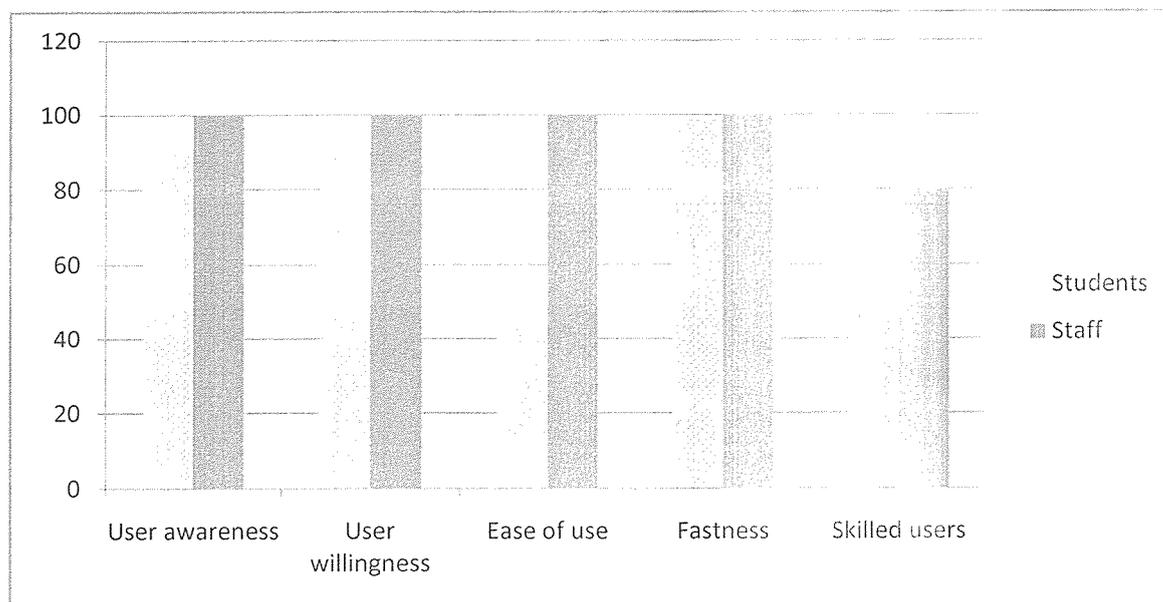
The majority of students in the College especially new students find it very difficult to use the e-library resources because of lack of basic computer skills. However, the e-library resources do not seem to be very difficult to use but we find it difficult to use simply because the majority of us are computer illiterates. He further stated that. "The students and our colleagues need to be educated and oriented on the importance of e-library resources.

The above responses indicate that the human factors affecting the use of e-library resources among the students and teaching staff in Jigawa State is lack of computer skills, fear, lack of awareness of the availability of the e-library resources, and lack of training on the use of e-library resources.

4.4.1 Comparison of questionnaire responses of staff and students' respondents on human factors

Comparison of staff and students' responses in respect to human factors affecting utilization of e-library resources was done to assess the similarity and difference in the two responses put together. The motive behind this was to compare and evaluate the perceptions between the two sets of respondents understudied. Thus, the comparison results showed that an average of 96.0% of the staff agreed with all the questions put to them (Table 4.12) while an average of only 77.6% of the student respondents did agree with the questions put to them. The figure below shows the results of the comparison in diagrammatic form (Bar chart).

Figure 4. 1: Comparing responses on human factors (Staff and Students)



4.5 Institutional factors that affect the utilization of e-library resources among staff and students in Jigawa State College of Education, Gumel.

This is in line with the study objective two. Quantitative data obtained in respect to this is presented below.

Table 4.13: Students questionnaire responses on institutional factors affecting utilization of e-library resources (n=341).

| Questions | SA | A | D | SD | Mean | Std |
|---|------------|------------|------------|------------|------|-------|
| Attitudes of e-library staff towards users of e-resources can influence utilisation | 14(4%) | 185(54.3%) | 109(32%) | 33(9.7%) | 2.53 | .726 |
| Capacity building training on e-library resources is also important | 76(22.3%) | 221(64.8%) | 27(7.9%) | 17(5%) | 3.04 | .708 |
| Power supply affects the utilisation | 110(32.3%) | 160(46.9%) | 41(12%) | 30(8.8%) | 3.03 | .892 |
| Internet strength and bandwidth can affect the utilization | 110(32.3%) | 160(46.9%) | 41(12%) | 30(8.8%) | 3.03 | .892 |
| The e-library has updates on simple and friendly interface | 18(5.2%) | 80(23.5%) | 170(49.9%) | 73(21.4%) | 2.13 | .804 |
| Availability of e-library resources influence effective utilisation | 51(15%) | 168(49.3%) | 58(17%) | 64(18.7) | 2.60 | .957 |
| Services rendered by the e-library can affect its effective utilisation | 10(2.9%) | 57(16.7%) | 150(44%) | 124(36.4%) | 1.86 | .794 |
| Time allocated to the e-library can affect its utilisation | 10(2.9%) | 57(16.7%) | 150(44%) | 124(36.4%) | 1.86 | .794 |
| Average mean | | | | | 2.51 | 0.821 |

Source: Researcher's computation (2018)

Table 4.13 indicates that a number of the respondents 4% strongly agreed, 54.3% agreed that attitudes of the e-library staff affect utilization of e-library resources with mean and standard deviation (2.53±.726) while 22.3% strongly agreed, 64.8% agreed that capacity building training

also affect utilization with mean and standard deviation (3.04±.708); 32.3% strongly agreed and 46.9% agreed that power supply affect utilization with mean and standard deviation (3.03±.892) as well; 32.3% strongly agreed, 46.9% agreed that internet strength and bandwidth can as well affect utilization with mean and standard deviation (3.03±.892); 15% strongly agreed, 49.3% agreed that availability of facilities can as well affect the utilization with mean and standard deviation (2.60±.957). However, a number of the respondents with 49.9% disagreed, 21.4% strongly disagreed that e-library has updates on simple and friendly interface with mean and standard deviation (2.13±.804), and 44.0% disagreed, 36.4% strongly disagreed with services rendered in the e-library section as well as time allocated to it influence utilization of e-resources in the College with mean and standard deviation (1.86±.794), respectively.

Table 4. 14: Staff questionnaire responses on institutional factors affecting utilization of e-library resources in the College

| Questions | SA | A | D | SD | Mean | Std |
|---|----------|--------|--------|--------|-------|-------|
| Attitudes of e-library staff towards users of e-resources can influence utilisation | 0(0%) | 2(20%) | 5(50%) | 3(30%) | 1.900 | .737 |
| Capacity building training on e-library resources is also important | 5(50%) | 4(40%) | 1(10%) | 0(0%) | 3.30 | .948 |
| Power supply affects the utilisation | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| Internet strength and bandwidth can affect the utilization | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| The e-library has updates on simple and friendly interface | 0(0%) | 7(70%) | 2(20%) | 1(10%) | 2.60 | .699 |
| Availability of e-library resources influence effective utilisation | 10(100%) | 0(0%) | 0(0%) | 0(0%) | 4.00 | .000 |
| Services rendered by the e-library can affect its effective utilisation | 0(0%) | 1(10%) | 6(60%) | 3(30%) | 1.80 | .632 |
| Time allocated to the e-library can affect its utilisation | 0(0%) | 1(10%) | 6(60%) | 3(30%) | 1.80 | .632 |
| Average mean | | | | | 2.80 | 0.588 |

Source: Researcher's computation (2018)

From the Table 4.14, it can be seen that a number of the respondents with 50% strongly agreed, 40% agreed, agreed that capacity building training influences effective utilization of the e-library resources with mean and standard deviation (3.30±.948); and 50% strongly agreed, 50% agreed, that power supply as well as internet strength and bandwidth also affect utilization with mean and standard deviation (3.50±.527) respectively; and 100% strongly agreed, that availability of enough facilities in the e-library section influences the way e-resources utilization in the College with mean and standard deviation (4.00±.000). On the contrary, a percentage of the respondents 50% disagreed, 30% strongly disagreed did also disagreed that attitudes of the e-library staff influence e-resources utilization with mean and standard deviation (1.900±.737) whereas 60% disagreed, 30% strongly disagreed, that services rendered by the e-library section as well as time allocated to it could influence the way e-resources were utilized in the College with mean and standard deviation (1.80±.632), respectively.

Furthermore, in a qualitative survey, the researcher asked the KIIs the following question: What skills are required for a librarian to manage e-resources? Their responses were summarized as follow:

for a librarian to manage the e-resources section of the library, he or she needs to have vast knowledge in the management of library at least he/she have a minimum qualification of Bachelor's degree in Library Science or its equivalence. Also, a librarian managing the e-resources section needs to be very good in computer operations as well as in the use of the resources for searching for the required information and other materials.

A librarian managing the e-library resources has to be a very good human relation with users of the e-library resources by being very friendly with them and ever ready to assist them in using the resources.

Furthermore, the KIIs were asked this question: How do you assess the effectiveness of the services rendered by the e-library? Their responses were summarized as below:

In fact services rendered by the e-library section of the College are commendable except that the library faces some sorts of challenges.

I feel services rendered by the e-library were encouraging however, efficient assessment of the effectiveness of these services was challenging because of the low patronage and lack of good records.

Similarly, while responding to the question, KIIs were asked the following question: What is the attitude of the College Management towards the e-library?

Although the College Management always claims to be very prompt in attending to issues with regards to the e-library section, a lot has to be done in that respect. the question of e-library is still a new concept, and it is very costly for the College, ...the management should support the running of the library...they believe that it is a waste of money, but the truth is things have really changed so much, and we need their support so that this venture can be properly financed to solve some of the shortages we are having in the numbers of computers in the library.

I feel the issue of e-library is not well understood by many in the College which is considered to be very expensive and difficult to run. Also, I think the College Management is discouraged by the low patronage of the e-library by users especially the students.

The above extract shows the attitude of the college management is not helpful to the e-library users. However, the teacher librarian is needed more than ever in this virtual library to guide students in their selection, evaluation, and use of the many electronic options. The roles for the teacher librarian can be to coach and users to navigate quickly to sites that are information rich so that no one wastes time wondering around.

Furthermore, a FGD, KIIs were asked the following question: How accessible are the e-resources in the e-library? Their responses were summarized as below:

Physically, the e-library resources were always accessible because whenever one goes to the library, they were found but regarding functionality, their resources were not accessible because most of the times there was a power outage in the library so users could not use these resources in such situation of power outage.

The resources are always available and accessible but a good number of us (students) do not utilize the resources because of lack of computer skills. Also, even those who are computer literate do not know how to search for information from the e-resources.

The researcher further asked the KIIs the following question: What are the challenges facing the proper usage of e-resources in the College library?

There is a challenge of power supply in the College... at the same time, the College has a standby generator but fuelling is a problem...this makes it very difficult to use the e-resource in the library. When an electricity goes off, sometimes take before it is back...this is a problem for us.

The college is grappling with the issue of lack of computer skills among the teaching staff, the library staff needs to improve their skills through both software and hardware trainings in order to effectively manage the e-library resources as well as the students on the use of e-library....at the moment we are having a skills-gap as regard to how to use the e-library facilities properly.....those who try to use the facility end up gambling that is why most computers get spoilt at short distance.

Other challenges facing the e-library resources include; that of the library department giving limited time per session; the problem of few computers having small RAMs, and limited e-library space which makes it so access and use e-library resources. Besides, according to these participants.....the college finds it very costly to maintain an internet connection for e-library resources...sometimes the internet is cutoff for non-payment of subscription feesbut the services of the internet service providers is also so unreliable....their connections often times is very slow and easily interrupted by bad weather like rain and wind.

The e-library faces some challenges which if not resolved could hamper the general services rendered by the library the most pressing problems being epileptic power supply, weak internet service network and lack of computer skills on the part of users among others. Furthermore, the participants continue stating that.... there is also the problem of mixing the conventional library with the e-library.....sometimes the place is

too crowded that one can hardly concentrate.....it would have been appropriate to set up a dedicated e-library section far from the conventional section so as to provide a conducive learning environment.

The above response signifies that the institutional factors affecting e-library utilization by the students and the teaching staff is unstable electricity, lack of management support, skills-gap, limited space and time given per-session, and costly and unstable internet connection.

4.5.1 Comparing questionnaire responses of students and staff on institutional factors affecting utilization of e-resources in the College

Comparison of staff and students' responses with regards to institutional factors affecting utilization of e-resources was done to assess the similarity and difference in the two responses. The motive behind this was that the extent of perceptions between the two sets of respondents could be studied. Hence, the comparison of the staff and students' responses showed that an average of 54.5% of the student respondents agreed with institutional factors that influence effective utilization of e-resources in the College while an average of 62.5% of the staff respondents also coincided with the questions. The figure 4.2. Below shows the results of the comparison in diagrammatic form (Bar chart).

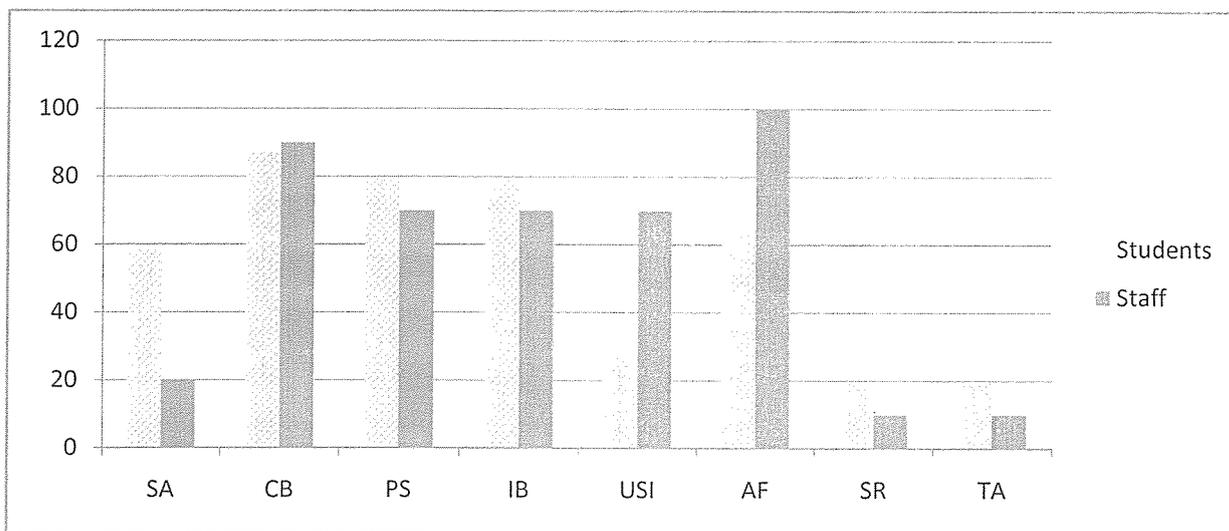


Figure 4. 2: Comparing responses on institutional factors in diagrammatic form (this work)

KEY:

Staff Attitudes (SA)

Capacity Building (CB)

Power Supply(PS)

Internet Bandwidth (IB)

Update on Simple Interface (USI)

Availability of Facilities (AF)

Services Rendered (SR) and

Time Allocated (TA)

4.6 The system factors affecting the utilization of e-library resources in Jigawa State College of Education, Gumel.

This is in line with objective three of the study. In order to find answers to this objective, only qualitative data was sought from the different categories of the participant using Key Informant Interview and Focus Group Discussion. Before the commencement of the interview and the discussions, all the participants were well intimates on what was meant by other factors in this context.

4.6.1 The system factors affecting the utilization of e-library resources in Jigawa State College of Education, Gumel

This is in line with objective three of the study. In order to find answers to this objective, only qualitative data was sought from the different categories of the participants using Key Informant Interview and Focus Group Discussion. Before the commencement of the interview and the discussions, all the participants were well intimates on what was meant by system factors in this context.

The researcher asked KIIs the following questions: What are the system factors affecting utilization of e-library resources? Their responses were summarized as below:

There is no information system available that allows integration of the e-library system with faculties and departments to promote easy access. All the college systems are independent and are only integrated within the domains of the departments.

Due to lack of integration, information sharing is not possible and it has resulted into limited sharing of information and the flow of information. This implies that the e-library only works when one is in the library premise but not when he or she is somewhere else but within the campus premise.

Still responding to the above question asked in focus group discussion (FGD). The participants' staff and students stated the same view that:

There is also the challenge of increasing journal subscription fees that makes it impossible to access very relevant academic information from such database.

Therefore, findings from the above responses do signify that some of the system factors are lack of integration; information sharing resulted into limited sharing of information and the flow of information in the college.

4.7 Strategies for enhancing effective utilization of e-library resources among staff and students of the Jigawa State College of Education, Gumel

This is in line with the objective four of the study. Quantitative and Qualitative data obtained from all categories of respondents and participants with respect to this objective.

Table 4. 15: Students questionnaire responses on strategies for enhancing the effective utilization of e-library resources in the College (n=341)

| Questions | SA | A | D | SD | Mean | Std |
|---|------------|------------|-----------|-----------|------|-------|
| E-library staff should be more friendly | 102(29.9%) | 166(48.7%) | 34(10%) | 39(11.4%) | 2.97 | .926 |
| Capacity building training should be given to the staff and students on e-library resources | 115(33.7%) | 169(49.6%) | 24(7.0%) | 33(9.7%) | 3.07 | .890 |
| The stable power supply should be made available | 102(29.9%) | 183(53.7%) | 16(4.7%) | 40(11.7%) | 3.02 | .904 |
| The internet strength and bandwidth should be strengthened | 102(29.9%) | 183(53.7%) | 16(4.7%) | 40(11.7%) | 3.02 | .904 |
| The e-library should have updates on simple and friendly interface | 107(31.4%) | 179(52.5%) | 26(7.6%) | 29(8.5%) | 3.07 | .853 |
| Provision of sufficient e-resources to the e-library could also help | 110(32.3%) | 176(51.6%) | 20(5.9%) | 35(10.3) | 3.06 | .889 |
| Services offered by the e-library should be more convenient | 101(29.6%) | 119(34.9%) | 50(14.7%) | 71(20.8%) | 2.73 | 1.099 |
| Time allocated to the e-library should also be more convenient to users | 101(29.6%) | 119(34.9%) | 50(14.7%) | 71(20.8%) | 2.73 | 1.099 |
| Average mean | | | | | 2.96 | 0.955 |

Source: Researcher's computation (2018)

From the Table 4.15 it can be seen that a number of the student respondents with 29.9% strongly agreed, 48.7% agreed, that friendliness of the e-library staff enhance utilization of the e-library resources with mean and standard deviation (2.97±.926) ; and 33.7% strongly agreed, 49.6%

agreed, that capacity building training of users also enhance the utilization with mean and standard deviation (3.07±.890); so also the result shows that stable power supply and internet strength can influence the utilization with 29.9% strongly agreed, 53.7% agreed with mean and standard deviation (3.02±.904) respectively; as well 31.4% strongly agreed, 51.6% agreed, that the provision of updates on simple and friendly interface could also enhance the utilization of e-resources with mean and standard deviation (3.07±.853); also 32.3% strongly agreed, 51.6% agreed, that provision of sufficient resources in the e-library section influence the utilization of e-resources in the College with mean and standard deviation (3.06±.889); whereas services rendered by the e-library as well as the time allocated influence the way users utilize the e-library with 29.6% strongly agreed, 34.9% agreed (2.73±1.099) respectively.

Table 4. 16: Staff questionnaire responses to strategies for the enhancement of the utilization of e-library resources in the College (n=10)

| Questions | SA | A | D | SD | Mean | Std |
|---|--------|--------|--------|-------|------|-------|
| E-library staff should be more friendly | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| Capacity building training should be given to the staff and students on e-library resources | 6(60%) | 3(30%) | 1(10%) | 0(0%) | 3.40 | .966 |
| Stable power supply should be made available | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| The internet strength and bandwidth should be strengthened | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| The e-library should have updates on simple and friendly interface | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| Provision of sufficient e-resources to the e-library could also help | 5(50%) | 5(50%) | 0(0%) | 0(0%) | 3.50 | .527 |
| Services offered by the e-library should be more convenient | 5(50%) | 4(40%) | 1(10%) | 0(0%) | 3.30 | .948 |
| Time allocated to the e-library should also be more convenient to users | 5(50%) | 4(40%) | 1(10%) | 0(0%) | 3.30 | .948 |
| Average mean | | | | | 3.44 | 0.678 |

Source: Researcher's computation (2018)

Table 4.16 indicates that the staff responses to the questionnaire on strategies to enhance effective utilization of e-resources in the College obtained wide acceptance much more similar to those of the student respondents. They agreed that the e-library staff should be friendly in order to enhance utilization of e-resources with 50% strongly agreed, 50% agreed with mean and standard deviation (3.50±.527); also agreed that provision of capacity building training for the

users enhances the utilization with 60% strongly agreed, 30%; whereas respondents agreed that stable power supply and strong internet strength also influence utilization of e-resources with 50% strongly agreed, 50% agreed, respectively; provision of updates on simple and friendly interface influences e-resources utilization with 50% strongly agreed, 50% agreed; services rendered by the e-library as well as time allocated to are very convenient so as to encourage utilization of e-resources in the College with 50% strongly agreed, 40% agreed, respectively.

In a qualitative survey, KIIs were asked the following question: What strategies can be employed for the enhancement of e-resources utilization in the College? Their responses were summarised as below:

I think there is a need to train college librarians and deans of the schools on the use and management of e-library resources..... This calls for training of those concerned with the management of the e-library in the College.

The efforts to encourage the use of e-resources in the library should concentrate on the selection of appropriate medium of information dissemination about the resource facility of the Library. In the process, specific attention should be paid to the use of the mailing system and personal interaction among librarians and teaching staff to increase awareness of the e-library services.

there is the need for the teaching staff to increase the patronage/use to the e- library facility.....and enlighten the students about its relevance and importance in the improvement of their academic performance..... also stated that: for the effective utilization of e-resources in the College, a stable source of power supply should be provided in order to do away with the epileptic power supply we have now which renders the e-library section a ghost's sleeping place

there is very few library staff to serve the overwhelming number of students and teaching staff.....there is need to recruit more technical library staff and consultants to meet manpower needs of the e-library technology.

Meanwhile, while discussing the question asked on what strategies could be employed to enhance the effective utilization of e-resources in the College, the student participants' responses were summarized as follows:

More up to date computers and other relevant facilities should be made available in the e-library, proper orientation and training on the use of e-resources should be given to all students, teachers should also encourage students to make use of the e-resources, services rendered by the e-library should also be improved and the time allocated to the e-library should also be made so convenient to all students.

The e-library should provide access to electronic resources, free web based resources, locally digitized resources, and open access resources.....at the moment there is very limited access to some websites and resources because they need payment.

I think there should be improved Internet bandwidth to improve the speed of information access by the students and teaching staff. This requires technical backup support to ensure stability and maintain search power. This should encourage and motivate learners to utilize online services

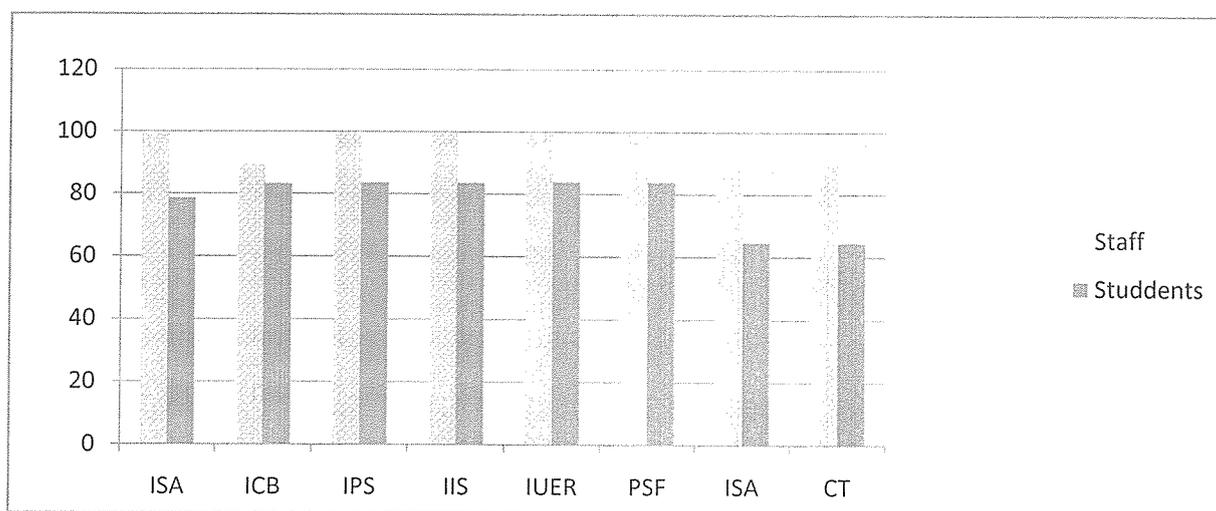
Provide adequate functional computers at the digital library to reduce congestion, and for the convenience of learners. This should involve a proper maintenance programme and replacement of obsolete and non-functional equipment.

To enhance utilization of e-resources in the College, there should be a reliable power supply for the library, which should entail procuring necessary power back-up equipment, including fueling generators regularly.

The above responses implies that there was a huge gap between management and e-library resources which have eventually succeeded in limiting the use of e-library resources. These suggestions imply that e-library services at Jigawa College of Education are still at a very infant stage with several hindrances affecting its utilization, however, if these suggestions are effectively and timely addressed, there is a high likelihood that utilization of e-library resources will improve among the students and the teaching staff.

4.7.1 Comparison of staff and students questionnaire responses to strategies for enhancing utilization of e-resources in the college

Comparison of the staff and students' questionnaire responses on strategies for enhancement of effective utilization of e-resources in the college shows that responses from both side were almost similar. The average percentage response of staff was 96.2% while that of the students was found to be 78.6%. These results indicated that the staff respondents agreed with the facts more than their student counterparts with almost 17.0. Figure 4.3 below show Comparing staff



and students' responses on strategies for enhancing e-library resources utilization in diagrammatic form.

Figure 4. 3: Comparing staff and students' responses on strategies for enhancing e-library resources utilization

KEY:

Improved Library Staff Attitude (ISA)

Improved Capacity Building (ICB)

Improved Power Supply (IPS)

Improved Internet Signal (IIS)

Improved Updates on E-resources (IUER)

Provision of Sufficient Facilities (PSF)

Improved Services (IS) and

Convenient Time (CT).

CHAPTER FIVE

DISCUSSIONS OF THE FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.0 Introduction

In this chapter, the result presented in the previous chapters was discussed. The chapter also presents the conclusion and recommendations based on the research findings and objectives.

5.1 Discussions of the research findings

This section of the report presents discussions of the findings made based on the objectives of the study. However, it should be clarified here that out of the 365 questionnaires distributed, only 351 were successfully retrieved because some of the respondents could not be located to recover the questionnaires given to them hence, analysis of results were done only with the retrieved questionnaires.

5.1.1 Demographic characteristics of the respondents(students)

The findings from the students indicated that majority, 78% were male, 68% were within the age group of 26-30 years, and 31.7% were from the School of Arts and Social Sciences.

5.1.2 Demographic characteristics of the respondents (staff)

The study revealed that majority, 80% of the respondents were male within the age group of 40-49 years, followed by 40% who had Master's Degree qualifications and 30% who had working experience of 6-10 years and 11-15 years respectively.

5.2 Specific Objectives

5.2.1 Human factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel.

The first objective of the study was to examine the human factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel, Nigeria. The findings obtained from questionnaire responses as well as key informant interview(KII), and Focus Group Discussions with the student respondents indicated that majority of them agreed that user awareness, user willingness and ease of locating information were vital human factors that could

affect the effective utilization of e-library resources in the College. However, some of the respondents 55.1% disagreed with the questions that the e-library resources were user friendly and easy to manipulate. On the other hand 62.5% agreed that more skilled users manipulated the e-library resources. As regard to staff responses to this objective, about 96% of the respondents agreed with the fact that user willingness and awareness as well as e-library resources friendliness, and ease of locating and sourcing of information were essential human factors that influenced effective utilization of the e-library in the College.

The findings of the study concurred with those of Ahmad and Panda, (2013) who found that majority of the faculty members of Indian Institutes in Dubai International Academic City were aware of the existence and uses of electronic information resources. On a similar ground, Dolo-Ndlwana, (2013) found out that most of the academic and postgraduate students at Cape Peninsula University of Technology used electronic resources but few were not aware of its existence. In the same vein, Paulina's *et al.*, (2014) study on awareness of faculty's electronic resources and online academic data bases found out that faculty members depended highly on online electronic resources for their support of teaching. However, patronage of the library's online academic databases was very low. This was largely because faculty members were either not aware of the existence of these databases or were not aware that the library had subscription to these databases. This implies that lack of awareness of e-library resources lead to less utilization.

In addition, Kwadzo (2015) conducted a study on awareness and usage of electronic database (e-database) in Geography and Resource Development Information Studies for Graduate Students in the University of Ghana and found out that the students were aware of the availability of subscribed databases. However, awareness level was generally higher than usage. This suggests that awareness may only be a necessary condition but not sufficient for the use of Library resources. In a similar study, Akpojotor (2016) found out that postgraduate students of library and information science were quite aware and highly use electronic information resources. This can be said to imply that, the level of utilization of e-library resources is very much dependent on level of awareness of the e-resources.

However, concerning the level of utilization of the e-library resources among the staff and students, it was gathered from the interviews that users of the e-library resources find it very difficult to use the e-library because they lack the required skills to do so. Besides, the orientation and induction programs were dying out due to laxity and lack of seriousness from staff and students. This could also be a limiting factor towards the effective utilization of the e-resources in the college. The study found that many of the students and some staff still prefer to go to the conventional library and use printed materials to seek for information pertaining to their studies. From the finding of this study, most staff and students complained of not visiting the e-library section due to lack of basic computer skills. The study found that the students fear to use computer to avoid being laughed at because they have limited computer skills. For this reason some of the students do not waste time for using the so called e-library resources. So there is need for the Jigawa State College of Education Library to improve more on its orientation and training on how to use the e-library resources.

5.2.2 Institutional factors that affect the utilization of e-library resources among staff and students in Jigawa State College of Education, Gumel.

The second objective of the study was to determine the institutional factors that affect the utilization of e-library resources in Jigawa State College of Education, Gumel, Nigeria. The findings to this objective were obtained from questionnaire responses from staff and students as well as key informant interview (KII) and Focus Group Discussions.

With respect to this objective, questionnaire responses obtained from the students revealed that majority, (76.9%) of them agreed that; capacity building trainings, stable power supply and availability of e-resources in the e-library section were the fundamental institutional factors capable of influencing the effective utilization of e-resources in the College. Quite a number of the respondents (80.4%) disagreed that services rendered in the e-library as well as the time allocated to it were not important in determining the effectiveness of e-library utilization. Besides, 58.3% of the respondents agreed that attitudes of the e-library staff could affect the effective utilization of the e-library resources.

The findings concurred with Gakibayo *et al.*, (2013) when they assessed the utilization of electronic information resources in Mbarara University Library by students and found out that

usage of e-library resources was not only affected by lack of computer skills and information literacy skills but also lack of enough computers and slow internet connectivity.

Availability of facilities in the e-library section was also indicated by the respondents to be a vital factor for effective use of e-library resources. The relevance and necessity of up to-date and reliable resources in the e-library section cannot be overemphasized. Thus, this finding was further confirmed by a similar study conducted by Oyedum, (2011) who pointed out physical facilities as one of the environmental factors that influenced the students' use of the library. An inadequate number of physical facilities such as reading chairs and tables as well as lightings resulted in a low level of use of the libraries. It was more important than ever for libraries to demonstrate to students and stakeholders the value of using the libraries' resources and services. Some of the facilities required in the e-library include reliable internet services, computer, information retrieval system (OPAC) and so on. Owolabi *et al.*, (2016) carried out a study on utilization of electronic information resources by undergraduate students of University of Ibadan, Nigeria. The findings revealed that the internet services, e-mail services, online databases, electronic databases, and cybercafés were the available electronic information resources often used by undergraduate students in the University of Ibadan.

Although 20% of the respondents agreed that attitudes of the e-library staff towards users, could affect effective utilization, a considerable number of them (80%) disagreed with the question. However, other similar studies on staff attitudes were found to influence effective use of the e-library resources as kind attitudes motivated and attracted users while harsh behaviors discouraged users. According to Amanuel and Laurence (2015), revealed that lack of organized staff development program, poor attitude of the society toward library staff, unsatisfactory salary, unequal treatment and others are the main contributing forces that triggered library professionals in changing to other professions.

Similarly, the information obtained from the interviews conducted, showed that services rendered with the e-library were effective though faced by many challenges. The relationship between library staff and users were friendly. Proper training and re-training, mentoring and harnessing the synergy of ideas, with respectful communication to form future generation library professionals, was found to be desirable (Adetoun and Benedict, 2014).

With respect to skills required by a librarian to manage e-resources the study found that he or she needs to have minimum qualification of Bachelor's degree in Library Science or its equivalence. Also, he/she must have good human relation with users of the e-library resources must be ready to assist them in using the resources. This conforms to the contribution of Kinegyere *et al.*, (2012), were many factors that influenced e-resources utilization like limited number of computers, limited time, lack of awareness, library staff do not help users as well as unreliable electricity among others.

Meanwhile, with regard to the effectiveness of the services rendered by the e-library in the college, the study found that the College Management needs to diversify services rendered by the e-library section in order to meet up with current standard. This is consistent with Duren (2013,) which identified the need for adequate leadership style and behavior in a bid to adapt effectively to new technologies. Older library professionals, many of whom are still very visible across leadership strata of libraries, were found to exhibit diverse attitudes to the adaptation of ICT deployment and use in their libraries. More so, with respect to College Management towards the e-library, it was found encouraging except that the question of e-library is still a new concept in the college and it is very expensive for the college to handle. It should be noted leadership style has direct consequences on the success of the e-library in Institutional sectors such as colleges of higher learning.

Furthermore, the finding of this studies about the attitude of the College Management towards the e-library revealed a high level of lack of support. This is because management had always remained adamant of financially supporting the e-library system so as for it to work and serve its intended purpose effectively. This study concurred with Esther (2014) who viewed that e-library management as top personnel that are responsibility for effective utilization of e-library resources, human, materials, and finance, machine and physical facilities towards the attainment of the objectives of the e-library.

In addition, the findings on ease of e-library resources accessibility show that most of the times there was electricity power in the library so users can use these resources. The respondents indicated that e-library resources were often available and accessible. However, majority of the students still did not make use of these resources because of lack of computer skills. Moreover

those who are computer literate do not know how to search for information from the e-resources. This finding conforms to the finding (Gakibayo *et al.*, 2013, Adetoun and Benedict, 2014).

In addition, the participants perceived that the relationship between the users and the library staff in respect to help in using these resources were found to be good and cordial but the level of friendliness among the staff varied significantly. This finding is in agreement with the finding of (Halima *et al.*, 2015).

With regards to the challenges facing proper usage of e-resources in the College library, there is a challenge of power supply, lack of computer skills among the teaching staff, the library staff needs to improve their skills through both software and hardware trainings in order to effectively manage the e-library resources. Other challenges facing the e-library resources include; that of the library department giving limited time per session; the problem of few computers having small RAMs; and limited e-library space which makes it so difficult to effectively access and use e-library resources also their connections often times is very slow and easily interrupted by bad weather like rain and wind sometimes the place is too crowded that one can hardly concentrate where the participants have an agreement that, it would have been appropriate to set up a dedicated e-library section far from the conventional section so as to provide a conducive learning. This conform the contribution of (Oyedum, 2011, Nimsomboon and Nagata, 2013) which revealed that physical facilities as one of the environmental factors that influenced the students' use of the library when they are involved in library services, and they include among others: library collections, accessibility, insufficient space, and quality of the service provided.

5.2.3 The system factors affecting the utilization of e-library resources in Jigawa State College of Education, Gumel.

The third objective of the study was to investigate system factors that have effects on effective utilization of e-library resources. With regards to this objective, qualitative data using both interviews and Focus Group Discussions were employed. The data obtained from the participants, revealed that there was no information system available that allows integration of the e-library system with schools and departments to promote easy access. Due to lack of

integration, information sharing was not possible and it has resulted into limited sharing of information and the flow of information. There was also the challenge of increasing journal subscription fees that makes it impossible to access very relevant academic information from such databases.

The finding is concurred with contribution of (Ali 2005, Zissis & Lekkas, 2012) which revealed that most of the contributing factor that influenced the staff and students to use of e-library resources are the availability of information through the Web which enables them be motivated to search beyond subject-disciplinary as well as their future academic achievement success in teaching, learning and research. This study concurred with finding of Auer *et al.*, (2007) which revealed that staff and students can follow further links from where they are on the Web site. For instance, the special feature known as V-Link enables users to link to Internet information items that are related to the identified items. This feature enables staff and students to interact with a wide range of content on topics of interest in the absence of the identified items. Therefore, Library services' networked information environment provides staff and students with access to a wide range of information.

5.2.4 Strategies for enhancing effective utilization of e-library resources among staff and students of the Jigawa State College of Education, Gumel.

The fourth objective of the study was to propose the strategies for the enhancement of e-library resources in Jigawa State College of Education, Gumel, Nigeria. Tools of data collection; Questionnaire, Key Informant Interview and Focus Group Discussions were used to have answer to the objective. Thus, it was revealed from the questionnaire responses, that all the question put to the respondents (both staff and students) regarding the possible strategies that could enhance utilization of e-library resources agreed. 89.2% of the respondents strongly agreed that capacity building training and orientation, stable power supply and dedicated internet bandwidth, provision of sufficient e-resources were potential strategies for improving better utilization of e-library resources in the College. Besides, 95% also agreed that the e-library should have update on simple and friendly interface and services rendered by the e-library section should also be made more convenient for the e-library resources to be utilized effectively for efficient teaching and learning processes.

Furthermore, qualitative data obtained also showed that there is the need to train the College Librarians and Deans of various schools as well as teaching staff on the use and management of e-resources as well as in information and web technology skills. It was believed by the respondents that there is a need to recruit more technical library staff and consultants to meet the manpower need of the e-library technology. Another enhancement strategies suggested by all the respondents include proper and constant orientation for both staff and students on the use of e-library, provision of reliable and constant power supply, provision of sufficient facilities to the e-library section as well as the provision of strong and reliable internet network. This finding conforms the contribution of Fedias, (2012), which revealed that there is need to have an organized, and well-coordinated library services aimed at supporting educational activities through the provision of timely, accurate, and reliable information resources. This is also consistent with Omoniwa (2010) which revealed that employment of librarians should be based on qualifications in technology applications. This strategy would improve on e-resource utilization, as library staff would be expected to provide leadership in computer applications such as the internet and CD-ROM technologies among others.

5.3 Conclusion

From the findings made by this study, it can be concluded that:

Objective one concludes that human factors that could influence utilization of e-library resources. All the respondents agreed that user awareness and willingness were essential factors for effective utilization of e-resources while it was also found that user awareness and willingness of the e-library among both staff and students were satisfactory. Hence, the possibility of making good use of the e-library can be guaranteed based on this finding which shows that user awareness and willingness of e-library were found to be good, utilization was also found to be commendable. However, most of the users were found to lack the required basic skills to use the e-library resources. This could hamper or militate against effective utilization of the e-library resources among both staff and students.

Objective two concludes that the Institutional factors that could affect the effective utilization of e-library resources in Jigawa State College of Education, are stable power supply, internet band

width, inadequate facilities and Management attitudes. Based on findings made from the interviews conducted with respect to institutional factors, it was discovered that the Jigawa State College of Education lacks stable power supply, there were challenges regarding the internet, efficient training and skills on the part of students and staff were lacking. The College Management had lukewarm attitudes towards issues pertaining the e-library. Hence, with this development, the effective utilization of e-library resources in the College is liable to face a lot of challenges as a result of the numerous problems facing the e-library.

Objective three concludes that the system factors that could affect the effective utilization of e-library resources in the Jigawa State College of Education, are lack of an integrated information system, limited information flow and sharing.

Finally, the forth objective of the study on how to enhance utilization of e-library resources in the College. Most of these strategies seem to be connected with the problems or challenges emanating from the College which militate against the effective utilization of the e-library resources such as unstable power supply, poor internet signals, and lack of skills among many of the users as well as lukewarm attitudes of the Jigawa State College of Education Management among others. Possibly these suggested strategies if properly implemented could enhance the level of utilization of e-library resources.

5.4 Contribution to New Knowledge

This study validated TAM 2 in the following ways:

1. The outcome of this study will serve as information to the management of the college on the challenges of use of e-library resources in the college.
2. It will enhance awareness and policy maker by statutory bodies on the use of e-library resources in the college, state and federal level.
3. To librarians, it enhances their awareness about the usefulness and challenges of using e-library resources.

5.5 Recommendations

The recommendation drives from the objectives, Findings and conclusions of the study. Hence, this study recommends that:

1. The students and staff should be educated on Computer skills and mandate all students to use the e-library resources in other to appreciate.
2. The College Management should provide adequate manpower and upgrade facilities required by the e-library section. Alternative sources of power such as solar power should be provided to ensure stable power supply. Alternative internet service should also be provided for stable and reliable internet services in the e-library section. Library staff should be well trained to enable them manage efficiently the e-library resources.
3. The college management and the ICT department should work together to create a dynamic and robust information system that allows resources sharing among faculties, departments, and administration blocks. The information system should allow specialized information resources available from external sources to be accessed directly by students and staff, and head of departments and academic planners from the college e-library. Also, service barriers to information transfer should be eliminated so that students and staff can search and retrieve materials needed. Also, the college library management should solicit for financial resources from the government and private organizations through public partnerships so as to subscribe for more international journals whose resources are good in helping students and the teaching staff build their academic knowledge and skills.
4. The College Management should provide alternative source of power supply especially solar power should be provided, good internet network also provided, e-library staff should be given enough training. Effective orientations and computer trainings should be given to all potential users of the e-library. Management should be adequately funded in order to monitor and supervise as well as to enable them overcome other challenges face by the college e-library.

5.6 Area of further studies

Further study should be conducted to examine/investigate further human and institutional factors affecting full utilization of e-library resources in the Jigawa state college of education, Gumel.

In addition, more research is needed in establishing effective and innovative promotion strategies of e-library resources by college libraries in the Jigawa state college of education, Gumel.

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APPENDICES

APPENDIX I A: QUESTIONNAIRE FOR STUDENTS

Dear Respondents,

I am a candidate for Masters of Science Degree in Information Systems at Kampala International University conducting a study on “Assessing the factors affecting effective utilization of E-library Resources among staff and Students of Jigawa State College of Education Gumel, Nigeria.” In view of this, I request you to kindly answer this questionnaire to the best of your knowledge. Please be assured that the information you give will be treated with utmost confidentiality and will be used for academic purpose only.

I thank you

Yours faithfully

.....
Adamu Shafiu

(Please Tick):

Section A: General Information

1. Gender

(i) Male (ii) Female

2. Age

(i) 15-20 years

(ii) 21-25 years

(iii) 26-30 years

(iv) Above 30 years

3. Schools

- i. Sch. of Education
- ii. Sch. of Secondary Educ. Lang. Prog.
- ii. Sch. of Art and Social Science
- iv. Sch. of Adult, Non Formal and Special Edu.
- v. Sch. of Secondary Edu. Voc. & Tech. Prog.
- vi. Sch. of Early Child Care & Pri. Educ.
- vii. Sch. of Secondary Educ. Science Prog.

4. Educational level

- i. Pre-NCE
- ii. NCE
- iii. BSc (Ed)
- iv. BA (Ed)

5. Current year of study

- i. Year One
- ii. Year Two
- iii. Year Three
- iv. Year Four

SECTION B: FACTORS AFFECTING EFFECTIVE UTILIZATION OF E-LIBRARY RESOURCES

This section captures information about e-library resources utilization. Please indicate the level of your agreement with the statement below. Use the following scaling: 1=Strongly Disagree (SD); 2=Disagree (D); 3=Agree (A); 4=Strongly Agree (SA)

| S/N | QUESTIONS | 1 | 2 | 3 | 4 |
|----------|--|----------|----------|----------|----------|
| A | Human factors that affect effective utilization of e-library resources | | | | |
| 01 | User awareness of the e-library resources is very essential | | | | |
| 02 | Users' willingness in using the e-library resources plays a significant role | | | | |
| 03 | E-library resources are user- friendly and easier to manipulate | | | | |
| 04 | Locating and sourcing of information is faster and easier on e-library resources than conventional library | | | | |
| 05 | E-library resources are usually manipulated by more skilled users only | | | | |
| B | Institutional factors affecting effective utilization of e-library resources | 1 | 2 | 3 | 4 |
| 1. | Attitudes of e-library staff towards users of e-resources can influence utilisation | | | | |
| 2. | Capacity building training on e-library resources is also important | | | | |
| 3. | Power supply affects the utilisation | | | | |
| 4 | Internet strength and bandwidth can affect the utilization | | | | |
| 5 | The e-library has updates on simple and friendly interface | | | | |

| | | | | | |
|----------|---|----------|----------|----------|----------|
| 6. | Availability of e-library resources influence effective utilisation | | | | |
| 7. | Services rendered by the e-library can affect its effective utilisation | | | | |
| 8 | Time allocated to the e-library can affect its utilisation | | | | |
| C | Strategies for effective utilization of e-library resources | 1 | 2 | 3 | 4 |
| 1. | E-library staff should be more friendly | | | | |
| 2. | Capacity building training should be given to the staff and students on e-library resources | | | | |
| 3. | Stable power supply should be made available | | | | |
| 4 | The internet strength and bandwidth should be strengthened | | | | |
| 5 | The e-library should have updates on simple and friendly interface | | | | |
| 6. | Provision of sufficient e-resources to the e-library could also help | | | | |
| 7 | Services offered by the e-library should be more convenient | | | | |
| 8 | Time allocated to the e-library should also be more convenient to users | | | | |

Thank you for your time and cooperation

APPENDIX I B: QUESTIONNAIRE FOR THE TEACHING STAFF

Dear Respondents,

I am a candidate for Masters of Science Degree in Information Systems at Kampala International University conducting a study on “Assessing the factors affecting effective utilization of E-library Resources among staff and Students of Jigawa State College of Education Gumel, Nigeria.” In view of this, I request you to kindly answer this questionnaire to the best of your knowledge. Please be assured that the information you give will be treated with utmost confidentiality and will be used for academic purpose only.

I thank you

Yours faithfully

.....

Adamu Shafiu

(Please Tick):

Section A: General Information

1. Gender

(i) Male

(ii) Female

2. Age

(i) 20-29 years

(ii) 30-39 years

(iii) 40-49 years

(iv) Above 50 years

3. Schools

- i. Sch. of Education
- ii. Sch. of Secondary Educ. Lang. Prog.
- ii. Sch. of Art and Social Science
- iv. Sch. of Adult, Non Formal and Special Educ.
- v. Sch. of Secondary Edu. Voc. & Tech. Prog.
- vi. Sch. of Early Child Care & Pri. Educ.
- vii. Sch. of Secondary Educ. Science Prog.

4. Educational level

- (i) Bachelor Degree
- (ii) Master Degree
- (iii) PhD

5. Work Experience

- (i) 1-5 years
- (ii) 6-10 years
- (iii) 10-15 years
- (iv) More than 15 years

SECTION B: FACTORS AFFECTING EFFECTIVE UTILIZATION OF E-LIBRARY RESOURCES

This section captures information about e-library resources utilization. Please indicate the level of your agreement with the statement below. Use the following scaling: 1=Strongly Disagree (SD); 2=Disagree (D); 3=Agree (A); 4=Strongly Agree (SA)

| S/N | QUESTIONS | 1 | 2 | 3 | 4 |
|----------|--|----------|----------|----------|----------|
| A | Human factors that can affect effective utilization of e-library resources | | | | |
| 01 | User awareness of the e-library resources is very essential | | | | |
| 02 | Users' willingness in using the e-library resources plays a significant role | | | | |
| 03 | E-library resources are user- friendly and easier to manipulate | | | | |
| 04 | Locating and sourcing of information is faster and easier on e-library resources than conventional library | | | | |
| 05 | E-library resources are usually manipulated by more skilled users only | | | | |
| B | Institutional factors that can affect effective utilization of e-library resources | 1 | 2 | 3 | 4 |
| 1. | Attitudes of e-library staff towards users of e-resources can influence utilisation | | | | |
| 2. | Capacity building training on e-library resources is also important | | | | |
| 3. | Power supply affects the utilisation | | | | |
| 4 | Internet strength and bandwidth can affect the utilization | | | | |
| 5 | The e-library has updates on simple and friendly interface | | | | |

| | | | | | |
|----------|---|----------|----------|----------|----------|
| 6. | Availability of e-library resources influence effective utilisation | | | | |
| 7. | Services rendered by the e-library can affect its effective utilisation | | | | |
| 8 | Time allocated to the e-library can affect its utilisation | | | | |
| C | Strategies for effective utilization of e-library resources | 1 | 2 | 3 | 4 |
| 1. | E-library staff should be more friendly | | | | |
| 2. | Capacity building training should be given to the staff and students on e-library resources | | | | |
| 3. | Stable power supply should be made available | | | | |
| 4 | The internet signal and bandwidth should be strengthened | | | | |
| 5 | The e-library should have updates on simple and friendly interface | | | | |
| 6. | Provision of sufficient e-resources to the e-library could also help | | | | |
| 7 | Services offered by the e-library should be more convenient | | | | |
| 8 | Time allocated to the e-library should also be more convenient to users | | | | |

The End

Thank you for your time and cooperation

APPENDIX II: INFORMED CONSENT

I am giving my consent to be part of the research study of Mr. ADAMU SHAFIU that will focus on **“Assessing the factors affecting effective utilization of e-library resources among staff and students of Jigawa State College of Education Gumel, Nigeria”**.

I shall be assured of privacy, anonymity and confidentiality and that I will be given the option to refuse participation and right to withdraw my participation any time.

I have been informed that the research is voluntary and that the result will be given to me if I ask for it.

Initials: _____

Date:

APPENDIX III: DATA PRESENTATION AND ANALYSIS PLAN

| Objectives | Presentation | Method of analysis | Quantitative data | Qualitative data |
|------------------------|-----------------------|-----------------------------------|--------------------------|-------------------------|
| Profile of Respondents | Tables | Frequency and percentage analysis | Questionnaires | |
| Objective one | Tables | Mean and standard deviations | Questionnaires | Interviews, FGD |
| Objective two | Tables | Mean and standard deviations | Questionnaires | Interviews, FGD |
| Objective three | Thematic presentation | Themetics Method | | Interviews, FGD |
| Objective four | Tables | Mean and standard deviations | Questionnaires | Interviews, FGD |

APPENDIX IV: PLAN FOR FIELD DATA COLLECTION

| Objectives | Information sought | Respondents | Research tool |
|-------------------|---|-----------------------------|--------------------------------------|
| Objective one | Human factors | Students and teaching staff | Questionnaires, interviews and FGDs. |
| Objective two | Institutional factors | Students and teaching staff | Questionnaires, interviews and FGDs |
| Objective three | System factors | Students and teaching staff | Interviews and FGDs |
| Objective four | Strategies for enhancement of e-library resources | Students and teaching staff | Questionnaires, interviews and FGDs. |

APPENDIX V: FOCUS GROUP DISCUSSION

| S/N | OBJECTIVE | QUESTION |
|-----|-----------|--|
| 01 | ONE | <ol style="list-style-type: none"> 1. What assistance do you need to enable you to make use of the different e-resources in your library? 2. How easy is it to make use of the different e-resource in your library? |
| 02 | TWO | <ol style="list-style-type: none"> 1. How accessible are the e-resources in your library? 2. What is the relationship between the user and the library staff regarding the help in using the e-resources? 3. What are the challenges facing the proper usage of e-resources in College library? |
| 03 | THREE | <ol style="list-style-type: none"> 1. What are the system factors affecting the utilization of e-resources? |
| 04 | FOUR | <ol style="list-style-type: none"> 1. What strategies can be employed for the enhancement of e-resources utilization in the College? |

APPENDIX VI: KEY INFORMANT INTERVIEW

| S/N | OBJECTIVE | QUESTIONS |
|-----|-----------|---|
| 01 | ONE | <ol style="list-style-type: none"> 1. How do you assess the awareness of e-library by staff and students? 2. How do you assess the utilization of the e-library resources by both staff and students? |
| 02 | TWO | <ol style="list-style-type: none"> 1. What skill is required for a librarian to manage e-resources? 2. How do you assess the effectiveness of the services rendered by e-library? 3. What is the attitude of the college management towards the e-library? |
| 03 | THREE | <ol style="list-style-type: none"> 1. What are the system factors affecting utilization of e-library resources? |
| 04 | FOUR | <ol style="list-style-type: none"> 1. What strategies can be employed for the enhancement of e-resources utilization in the College? |

APPENDIX VII: TRANSMITTAL LETTER



Ggaba Road, Kansanga * PO BOX 20000 Kampala, Uganda
Tel: 0772385060 Fax: +256 (0) 41 - 501974 E-mail:
chdringuirise@kiu.ac.ug * Website: <http://www.kiu.ac.ug>

Directorate of Higher Degrees and Research Office of the Director

Our ref. 1161-04246-03981

Monday 4th December, 2017

Dear Sir/Madam,

Re: Introduction Letter for Adamu Shafiu
Reg. No. 1161-04246-03981

The above mentioned candidate is a student of Kampala International University pursuing a Master of Science Information Systems.

He is interested in conducting a research for his dissertation titled, "*Assessing the Utilization of E-Library Resources among Staff and Students of Jigawa State College of Education Gumel, Nigeria*".

Your organization has been identified as a valuable source of information pertaining to the research subject of interest. The purpose of this letter is to request you to kindly cooperate and avail the researcher with the pertinent information he may need. It is our belief that the findings from this research will benefit KIU and your organization.

Any information shared with the researcher will be used for academic purposes only and shall be kept with utmost confidentiality.

I appreciate any assistance rendered to the researcher.

Yours Sincerely,

Dr. Claire Mack Mugasa
Director

C.c. DVC, Academic Affairs
Dean, SCIT

"Exploring the Heights"

APPENDIX VIII: INTRODUCTORY LETTER



**JIGAWA STATE
COLLEGE OF EDUCATION**

P.M.B. 1002, GUMEL, JIGAWA STATE NIGERIA
E-mail Address: jscoegumel@yahoo.com

Dr. Sa'idu Barau Ahmed
B.Sc (ASU), MSc (BUK), PGDE, M.Ed (unifun), Ph.D (unilag)

PROVOST

Muhammad Tanimu Hadejia BAHUK, W. THE A.H
B.A (Hons) ABU Zaria

REGISTRAR

Our Ref: ¹⁴³
JSCOE/G/SP/A/122/VOL.I

Your Ref:

Date:
10th January, 2018

The Director,
Directorate of Higher Degrees and Research,
Office of the director,
Kampala International University

For the attention of Dr. Claire Mack Mugasa

**RE: INTRODUCTION LETTER IN RESPECT OF SHAFIU ADAMU
REGISTRATION NO. 1161-04246-03981**

I am directed to write and inform you that the College is ready to assist the said student and will give him all the necessary information he may need. In order to conduct his research successfully without any problem.

2. Best regard.

Thanks

Faithfully yours

Buhari Habu
Senior Executive Officer/SR
For: Registrar

APPENDIX IX: RESEARCH ADVISORS TABLE

Required Sample Size[†] from: The Research Advisors

| Population Size | Confidence = 95.0% | | | | Confidence = 99.0% | | | |
|-----------------|--|-------|-------|------|--|-------|-------|-------|
| | Degree of Accuracy/Margin of Error | | | | Degree of Accuracy/Margin of Error | | | |
| | 0.05 | 0.035 | 0.025 | 0.01 | 0.05 | 0.035 | 0.025 | 0.01 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 20 | 19 | 20 | 20 | 20 | 19 | 20 | 20 | 20 |
| 30 | 28 | 29 | 29 | 30 | 29 | 29 | 30 | 30 |
| 50 | 44 | 47 | 48 | 50 | 47 | 48 | 49 | 50 |
| 75 | 63 | 69 | 72 | 74 | 67 | 71 | 73 | 75 |
| 100 | 80 | 89 | 94 | 99 | 87 | 93 | 96 | 99 |
| 150 | 108 | 126 | 137 | 148 | 122 | 135 | 142 | 149 |
| 200 | 132 | 160 | 177 | 196 | 154 | 174 | 186 | 198 |
| 250 | 152 | 190 | 215 | 244 | 182 | 211 | 229 | 246 |
| 300 | 169 | 217 | 251 | 291 | 207 | 246 | 270 | 295 |
| 400 | 196 | 265 | 318 | 384 | 250 | 309 | 348 | 391 |
| 500 | 217 | 306 | 377 | 475 | 285 | 365 | 421 | 485 |
| 600 | 234 | 340 | 432 | 565 | 315 | 416 | 490 | 579 |
| 700 | 248 | 370 | 481 | 653 | 341 | 462 | 554 | 672 |
| 800 | 260 | 396 | 526 | 739 | 363 | 503 | 615 | 763 |
| 900 | 269 | 419 | 568 | 823 | 382 | 541 | 672 | 854 |
| 1,000 | 278 | 440 | 606 | 906 | 399 | 575 | 727 | 943 |
| 1,200 | 291 | 474 | 674 | 1067 | 427 | 636 | 827 | 1119 |
| 1,500 | 306 | 515 | 759 | 1297 | 460 | 712 | 959 | 1376 |
| 2,000 | 322 | 563 | 869 | 1655 | 498 | 808 | 1141 | 1785 |
| 2,500 | 333 | 597 | 952 | 1984 | 524 | 879 | 1288 | 2173 |
| 3,500 | 346 | 641 | 1068 | 2565 | 558 | 977 | 1510 | 2890 |
| 5,000 | 357 | 678 | 1176 | 3288 | 586 | 1066 | 1734 | 3842 |
| 7,500 | 365 | 710 | 1275 | 4211 | 610 | 1147 | 1960 | 5165 |
| 10,000 | 370 | 727 | 1332 | 4899 | 622 | 1193 | 2099 | 6239 |
| 25,000 | 378 | 760 | 1448 | 6939 | 646 | 1285 | 2399 | 9972 |
| 50,000 | 381 | 772 | 1491 | 8956 | 655 | 1318 | 2520 | 12455 |
| 75,000 | 382 | 776 | 1506 | 9514 | 658 | 1330 | 2563 | 13583 |
| 100,000 | 383 | 778 | 1513 | 9762 | 659 | 1336 | 2586 | 14227 |
| 250,000 | 384 | 782 | 1527 | 9248 | 662 | 1347 | 2626 | 15535 |
| 500,000 | 384 | 783 | 1532 | 9423 | 663 | 1350 | 2640 | 16055 |
| 1,000,000 | 384 | 783 | 1534 | 9512 | 663 | 1352 | 2647 | 16317 |
| 2,500,000 | 384 | 784 | 1536 | 9567 | 663 | 1353 | 2651 | 16478 |
| 10,000,000 | 384 | 784 | 1536 | 9594 | 663 | 1354 | 2653 | 16560 |
| 100,000,000 | 384 | 784 | 1537 | 9603 | 663 | 1354 | 2654 | 16584 |
| 264,000,000 | 384 | 784 | 1537 | 9603 | 663 | 1354 | 2654 | 16586 |

APPENDIX X: PICTURES
JIGAWA STATE COLLEGE OF EDUCATION (JSCO) PMB 1002 GUMEL, E-
LIBRARY



Plate 1: Front view of New JSCO E- Library

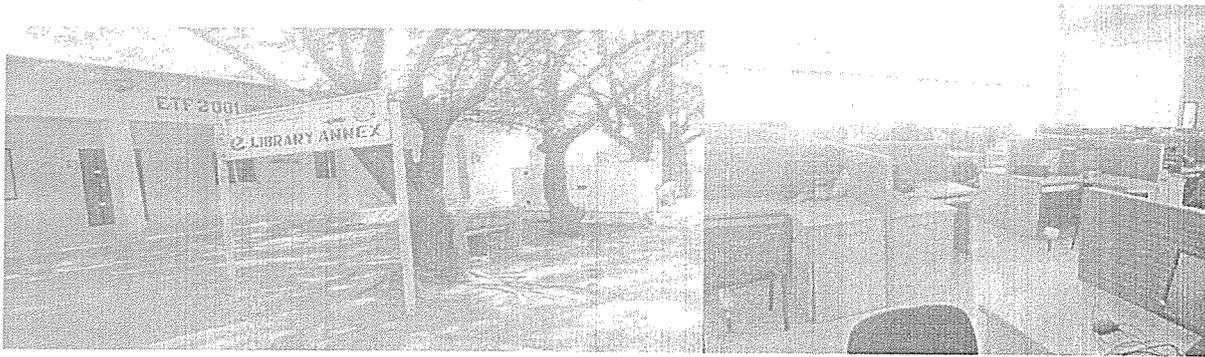


Plate 2: Front view of Annex E-Library JSCO



Plate 4: Interior of the New E-Library

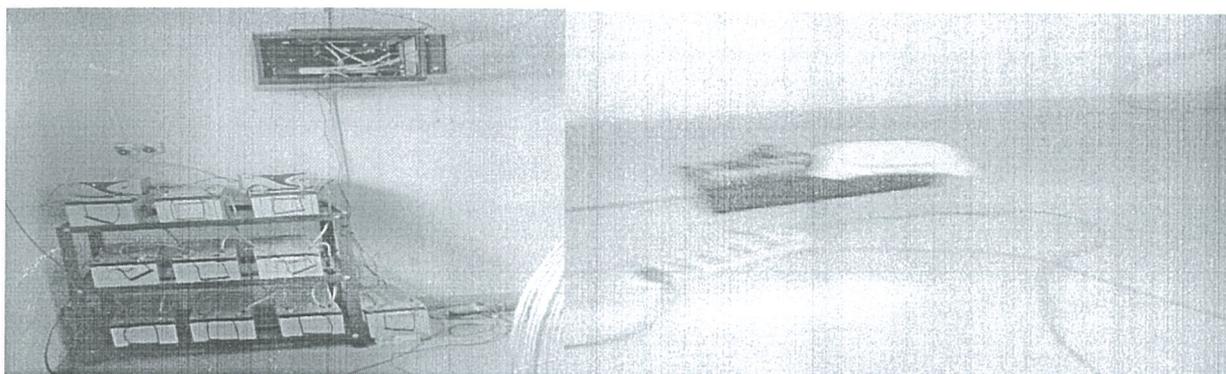


Plate 6: Interior of the New E-Library showing the servers and Batteries etc. uses in E-library

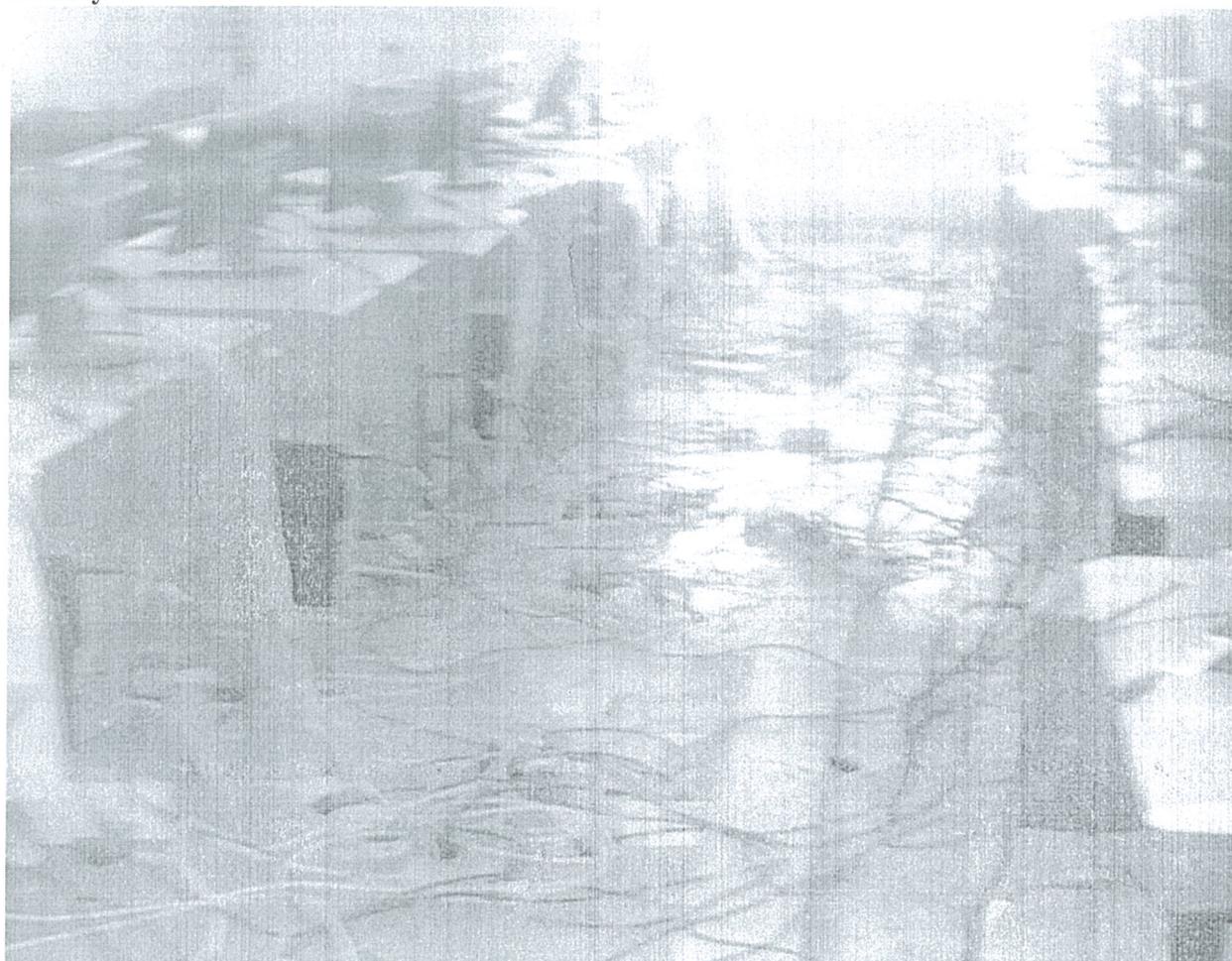


Plate 7: Annex e-library Section JSCOE



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