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THE USE OF ICT FOR SECURITY AND THEFT PREVENTION IN TWO UNIVERSITY LIBRARIES IN NIGERIA

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**THE USE OF ICT FOR SECURITY AND THEFT PREVENTION IN TWO
UNIVERSITY LIBRARIES IN NIGERIA**

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ABSTRACT

The study investigated the use of ICT for security and theft prevention in two university libraries in Nigeria. Population of the study is made up of 80 library staff of the two universities, 40 library staff from Umaru Musa Yar'adua University, Katsina and 40 library staff from Al-Qalam University Katsina. Five research questions guided the study. The data was analyzed with the use of simple statistical tools like frequencies and percentages. Findings of the study revealed that maximum security in the libraries will prevent theft mutilation. It also revealed that a video surveillance system working in conjunction with a barcode and magnetic book control system could help prevent book theft and monitor the move of books and other resources as it moves from one user to another. Lack of literate or skilled personnel: libraries and information Centre's lack skilled personnel that can operate, teach and instruct the use of these telecommunication security systems even when they are made available in the library. Poor power supply: These telecommunication security systems or devices need electricity to power them and due to the poor power supply, these systems often time are not working and as such are incapable of performing their expected task of securing the library and its collection. Hardware and software failure: This is major threat to the use of telecommunication security system in the library. When there is software failure or hardware breakdown that may require the need for an engineer who may not be available to put them in place as at when due, then the library system and its collections is at risk. Based on the findings of the study, it was recommended that the librarian and information experts should take out time to educate their parent organization on the benefits associated with libraries and information Centre's in the use of telecommunication security systems and devices so that the library parent body can release adequate fund which will be used for the purchase of telecommunication security devices in the library

INTRODUCTION

Libraries are institutions set up to cater for the educational, cultural, research, recreational and information needs of their users. Libraries have the main objectives of being entrusted with the selection, acquisition, organization, storage and dissemination of information to their patrons. Jama'a (2014) observed that academic libraries in particular, assume a focal point where users of diversified age groups, socio-political, economic backgrounds and cultural interests have to converge to utilize all the available resources that are relevant to their individual needs. As a result of this diverse use of the materials, these libraries stand to be vulnerable to all forms of crime and security risks from not only the users, but the library staff as well.

The exponential growth of information and information bearing materials are a result of the ever increasing growth of knowledge gives impetus for the need to organize information materials and to provide adequate security for these materials. To avoid unauthorized access to library resources, library management and information professionals must devise strategies which will enable them to provide adequate security that can protect the information resources available in the library. Library resources are the information bearing materials which enable the library to fulfill its goal of meeting the information needs of its users (Adomi, 2008). Libraries in their effort to provide a broad array of resources to meet the needs of their users collect resources in various sizes and formats. These library resources can include manifestation of the printed world, audio and video recordings, microforms, visual and electronic resources and generations of requisite equipment for accessing or listening to data stored on them". These resources constitutes library collection that help in meeting the users information needs Library collections are changing rapidly as more and more electronic resources become available. The proliferation of electronic resources does not mean that printed resources will disappear.

So also most libraries do not allow patrons to bring their bags and briefcase into the library. In spite of these precautions, library materials are still not safe. Therefore there is need for librarians to device a very concrete physical means of securing the materials available in the library and to have telecommunication or electronic security systems which will help to provide a safe and secure facility for library resources and equipment. To provide adequate security using telecommunication, electronic systems such as building alarm systems, access control systems, video surveillance, telesurveillance etc. can be adopted in the library.

Information security, is the practice of defending information and information bearing materials from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take (electronic, physical, etc...). The definitions of InfoSec suggested in different sources are summarized below:

"Preservation of confidentiality, integrity and availability of information.

In addition, other properties, such as authenticity, accountability, non-repudiation and reliability can also be involved." (ISO/IEC 27000:2009).

1. "The protection of information bearing materials i.e. book and non-book materials and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide confidentiality, integrity, and availability." (CNSS, 2010).

2. "Ensures that only authorized users (confidentiality) have access to accurate and complete information (integrity) when required (availability)." (ISACA, 2008).

3. "Information Security is the process of protecting the intellectual property of an organization." (Pipkin, 2010).

4. "Information security is the protection of information, information bearing materials and minimizes the risk of exposing information to unauthorized parties." (Venter and Eloff, 2008) Features of a good security measure (Physical and Electronic)

Information security systems typically provide message integrity in addition to data confidentiality and availability Paolo & Resca (2008) opined that for any information bearing materials and system to serve its purpose, the materials, the system and the information contained in them must be available when it is needed. This means that the physical materials such as books carrying the information, the computer systems used to store and process the information, the security controls used to protect it, and the communication channels used to access it must be functioning correctly. High availability systems aim to remain available at all times, preventing service disruptions due to power outages, hardware failures, and system upgrades. Ensuring availability also involves preventing denial-of-service attacks, such as a flood of incoming messages to the target system essentially forcing it to shut down. Authenticity In library, information security is necessary to ensure that information bearing materials or documents (electronic or physical) are genuine (Thomas and Teufel, 2008). It is also important for authenticity to validate that both parties involved in the exchange of information and information bearing materials are who they claim to be.

Some information security systems incorporate authentication features such as "digital signatures", which give evidence that the message data is genuine and was sent by someone possessing the proper signing key. Securing the Library Physically (Non-Electronic) The first step in securing library assets includes physical (non-electronic) deterrents. These include architectural considerations, the use of security personnel, and security hardware Site Design Site planning and landscape design issues should be considered when planning for a safe and Secure library.

Crowe & Timothy (2010) asserts that site lighting at vehicular and pedestrian entrances and circulation areas should be continuous and sufficient to support a secure atmosphere as well as support appropriate surveillance. Appropriate and clear signage should be provided, including off-site and entrance signage as well as on-site signage that should include directional, cautionary, and parking signs for employees, visitors, service vehicles, and pedestrians. Signs should generally not be provided to identify sensitive areas. Landscaping elements should enhance security by deterring unwanted entry while not allowing criminals to conceal themselves from security personnel and CCTV systems.

Crimes in the library

The crimes, which are committed by some users of the academic libraries, have deprived many others from fully achieving their information needs. Vandalism, mutilation, defacement, theft, arson, etc. are problems regularly encountered by the materials of these libraries. The commodity the libraries promote: books and other information materials are valuable and expensive but are likely targets for criminal activities. The expected roles of the academic library tend to lead it to criminal activities. The more the

control, safeguard and security levels there are, the less it resembles a library that is traditionally expected to serve as user.

Theft of and malicious damage against books are difficult to combat because the risk of getting caught is very low, while the likelihood of success is high. Criminal activities in academic libraries are not limited to library information materials alone but theft of properties such as handbags, purses, keys and notebooks are equally common. The extent, nature and rate at which these crimes occur vary from one academic library to another.

The causes by human agents relate to complete or partial loss of the library materials and this loss can be either permanent or temporary, making the materials unusable by other patrons of the library. This type of crime includes theft, mutilation and non-return of borrowed materials. The offenders of this type of crime are the patrons for whom the materials are collected to serve. These are the group of people, Richmond (2007) referred to categorically as causing the greatest loss and mutilation of library materials. He went further to observe that:

There are many natural disasters that cause loss of all or part of the library's collection: water, humidity, fire and many others. None of these however, has caused as much loss to many libraries as theft and mutilation by the very patrons these libraries see to serve.

Other damages done to library materials include those affected through shelving books or jamming them to either tightly on the stacks, bending books backward or pressing their backs for the purpose of photocopying. Natural agents or disaster in the library include fire, flood, rodents, insects, etc. which destroy materials in one way or the other.

In medicine, prevention is better than cure, and also in libraries good preventive measures particularly of storage and security should be on alert so as to prevent damages and missing of books. The art of prevention is as old as human civilization. Since the innovation of writing, mankind has been faced with the problem of prevention. Documents have been existed in one form or the other and it is natural for man to attempt to securing, managing and preventing them from deterioration. Edoke (2010), say that "library emerged when the need arose to safeguard, exploit and utilize records of civilization". Libraries have been seen as one of the pillars of civilization. No nation can function effectively without the use of a library. The term "library" means a collection of educational materials organized for use. The word is derived from the Latin word "Liber" which means a book. This is a good reason to believe that the root concept of Library is deeply embedded in our ways of thinking about the world and coping with its constraints. In its primary role as guardian of the social memory, there are many parallels with the ways in which the human memory orders, stores and retrieves the information necessary for survival. Broadhead (2007) asserted that the "study of library history and its related disciplines bear witness that the instinct to preserve, the zeal to collect and the desire to manage have been dominant influences in the genesis and growth of the library idea in the history of civilization".

Alokun (2008) affirm that "libraries are essentially established to cater for the information needs of different categories of users which covers different aspects of life, such as political, economical, social and cultural aspects". In order to achieve its purposes libraries have to put their best in securing, managing and preventing libraries collections from theft and mutilation to meet the demand of its heterogeneous clientele. Aina (2008), opines that a "library is concerned with the collection, processing, storage and dissemination of recorded information for the purpose of reading, study and consultation".

Library services can only be achieved through the availability of library collections. This implies that inadequate library collections will bring about inaccurate library services. Udensi and Sadiku (2007) define academic libraries as “library attached to institution of higher learning or tertiary institution such as universities, colleges of education, polytechnics and colleges of technologies”. An academic library, being a complex institution must have large quantities of materials to meet the demands of the numerous students, lecturers and faculty officers; therefore, there is the need to protect the materials in the library from factors such as theft, mutilation, and deterioration. The threat to intellectual property through theft, mutilation and other forms of abuse has been posed tremendous challenge to the library profession worldwide. According to Jackson (1991) “incidents of theft, non-return of materials and mutilation of 4 library stock are on the increase. These unwanted acts need a serious tackle in academic libraries in order to protect library resources”. Anunobi and Okoye (2008) contributed that, “academic libraries are faced with crossbreed challenges in order to acquire the necessary skills”. One challenge is the issue of security management for prevention of theft of print and non-print resources in the academic libraries. There is a need for academic libraries to ensure accessibility and effective use to make an effective program of collection security necessary. This programme must include assessment of collection security management for prevention of incessant book thefts and the measures use in curbing security infringement. Oyewusi and Oyeboade (2009) discussed the importance of access to collections in supporting the mission of the university. The researchers view the importance of good collections as a pointer to the need for safety and security for those collections. SCOUNL’s 2003 ‘New guidelines to safeguard collections in UK museums, archives and libraries’ recognise that ‘there is an established market for the stolen items, and they usually retain their value’. Book theft is identified as the most common crime in libraries, one which has been on the increase for many years. Theft and malicious damage against books are difficult to combat because the risk of getting caught is very low, while the likelihood of success is high. Criminal activities in academic libraries are not limited to library information materials alone but theft of 5 properties such as handbags, purses, calculators and notebooks are equally common. The extent, nature and rate at which these crimes occur vary from one academic library to another. The crimes, which are committed by some users of the academic libraries, have deprived many others from fully achieving their information needs. Vandalism, mutilation, defacement, theft, etc are problems regularly encountered by the materials of these libraries. The commodity the libraries promote: books and other information materials are valuable and expensive but are likely targets for criminal activities. The expected roles of the academic library tend to lead it to criminal activities. The more the control, safeguard and security levels there are, the less it resembles a library that is traditionally expected to serve users. The goal of the security system in the libraries should be to provide a safe and secure capability for library employees, library resources and equipment, and library patrons. At the same time, the security system must perform these functions as seamlessly as possible, without interfering with the library’s objective of easily and simply providing patron services.

As information professional, we have a responsibility to mankind: to explore the possibilities of finding methods of securing, managing and preventing library and information materials and to ensure their continued availability for as long as possible, remembering that prevention is better than cure.

Statement of the problem

Umaru Musa Yar’adua University Library and Al-Qalam University Library are Academic libraries built to meet the information needs of the students, lecturers and the university communities through the provision of qualitative and adequate information resources and services. Security management for

prevention of incessant thefts of information resources in the libraries in Nigeria is posing a great problem especially in the area of book theft and mutilation. Poor security cannot cope with incessant pressure on the library by students who either steal or mutilate books/journals without regard for laid down library regulations. This leads to the loss of many valuable materials in the libraries. Rebecca (2009) says though “the library had to contend with some problems which are found to affect the entire quality of library services, facilities and information resources”. The question here is how are these two sister university library making efforts to reduce or eliminate the issue of resource theft using ICT since now the world believes in technology to take us to the promise land. These are some of the issues that constitute the problem the researcher intends to investigate on the course of this study with the view of finding and making suggestion for improvement.

Objective of the study

The main motives or objectives of conducting this research was to gather certain information related to the use of I.C.T for security and theft prevention in the two universities libraries in katsina.

The objective of this study is to;

1. Identify causes of book theft and mutilation of library materials in UMYU and Al- Qalam University Library;
2. Find out the various means through which library materials are being stolen;
3. Identify the methods library adopt to prevent its information resources from the theft in the libraries;
4. Identify the security measures using ICT that can help to prevent theft and mutilation;
5. Identify the various problems militating against the use of ICT facilities in providing security of information resources in the libraries.

Research Questions

The following research questions will guide the study:

1. What is the causes of book theft and mutilation of library materials?
2. What are the means through which library materials are being stolen?
3. What method does the library adopt to prevent its information resources from the theft and mutilation?
4. What security measures using ICT that can help to prevent theft in the libraries?
5. What are the various problems militating against the use of ICT facilities in providing security of information resources in the libraries?

Significance of the Study

The significance of this study is based on the need to improve the security management or prevention of book thefts of the Umaru Musa Yar’adua University library and that of Al-Qalam University library, especially as it relates to the research as well as to reexamine the roles of the university library so as to achieve the stated objectives. Hence, the study becomes valuable as its findings if used will help to

rendering solutions to the problems of security management for prevention of incessant book thefts. University libraries are not always safe and secure places and they are facing a wide variety of security concerns which includes the theft and mutilation of library materials, the results of a number of library studies reported that most libraries across the globe are having problems with security management for prevention of library information resources.

LITERATURE REVIEW

The literature is reviewed under the following sub-headings:

- * Collection Security Problems in Academic Libraries
- * Nature of Book Thefts and Mutilation in Academic Libraries
- * Causes of Book Theft and Mutilation of Library Materials
- * Devices for Book Theft and Mutilation in the Libraries
- * Security Measures to Curb Theft and Mutilation of Library Materials

Information is defined by Aina (1995) as ideas, facts, and imaginative work of the mind and data of value potentially useful in decision making, question answering and problem solving. Laloo (2002) in his own view put it as a stimulus that reduces uncertainty and denotes the knowledge communicated, concerning some particular facts, subject or events. In fact, it is a product of the mind significant in problem solving by individual and the society at large. Information is an important factor in all aspects of human 12 development. The generation, acquisition, storage, retrieval and dissemination of this aspect of human and world phenomena forms the basic activities of human life and universal existence. Various trends of technological developments and human activities have led to the avalanche of information thereby creating an information society. To function effectively in the society, there must be an ability to find, evaluate, use and create information in many forms for personal, social or global purposes. This act or skill is necessary, considering the complexity in finding, selecting and using information as a result of information explosion. This means that the knowledge and ability to handle these challenges is the embodiment of information literacy. Ayoku and Lumade (2005) described information literacy as the ability to locate, evaluate, manage and use information from a range of sources not only for problem solving but also for decision making and research. Lwoga, Site, Busagala and Chilimo (2009) noted that ICT covers many product that stores, retrieves, manipulates, transmits or receives information electronically in digital form. This encompasses computers, the rapidly changing technologies (radio, television, mobile phones and internet), networking and data processing capabilities, and the software for using the technologies (Primon,, 2003). In the same vein, the Wikipedia free internet encyclopaedia (2009) defines information communication technology (ICT) as the technology required for information processing. In particular, it is the use of electronic computers and computer software to convert, store, 13 protect, process, transmit and retrieve information. Information is rooted in information technology, telecommunications and the media. Adeyoyin (2005) citing Boyade agrees with the Wikipedia that ICT is a tool for information processing put it as —the acquisition, processing, storage, and dissemination of information by means of computers and other telecommunication equipment. A library is set up to satisfy the information needs of its clientele, where a librarian uses the ICT tools to acquire, organize and disseminate the information to the users. Therefore, the ability to define, access, manage, evaluate,

integrate, create and communicate information using ICT tools in the ICT environment forms the overall perception of ICT literacy. Pernia(2008) in his own view, conceptually presented ICT literacy in three dimensions: knowledge, skills and attitude. Knowledge refers to foundational knowledge, skills to technical skills and attitude to critical assessment skills. The information society and the globalized world require ICT literate individuals to prosper.

Concept of ICT

According to Fagbanmi and Ogunjobi (2009), ICT is an umbrella term that includes all technologies encompassing medium for recording information such as Magnetic disk, tape, optical disks (CD/DVD) flash and paper record, technology for the broadcasting, information, radio, television and technology for communicating through voice and sound or image microphone camera, loudspeaker, telephone to cellular phones. It also includes a wide variety of computing hardware, desktop computers, laptops, storage devices etc. Omekwu (2007) see Information Technology (IT) as the computer hardware, software that facilitates the, storage, organizing processing and the retrieval of information. Omekwu further defined communication technology (CT) as all other technologies that enable humans to communicate and transmit 4 information, such as radio, television and telephone. This implies that IT and CT were integrated which developed to ICT, that encompasses all technologies that enables man to record, organize retrieve compute, communicate and transmit information. From the foregoing definitions given above one can define ICTs as electronic devices that encompass CD-ROM, computer hardware and software, CD, Internet, radio, television, disk, tape etc. that libraries and information centers manipulate to facilitate recording, organizing, storage, retrieval, transmission and dissemination of information within and outside their buildings. The introduction of ICTs in libraries dates as far back as 1950's and 60's in America and Europe (Adeyomoye, 2008). It started in form of automation projects where libraries tried to involve machines to help perform some tasks that are hitherto handled by humans alone. It however made its entry into Nigeria in the 1970's in form of automated projects. According to Nok cited in Adeyomoye (2008) though information and communication technologies have been in the pipeline since 1970 in Nigeria, concerted efforts towards its application began in the late 1990's mostly in academic libraries where it made its first debut. Libraries were sensitized through lectures of the need to computerize their operations. The new developments in the field of librarianship became so popular among academic libraries to this moment. This is because of its countless benefits to the libraries in every academic community. The value of ICT is endless (Gama, 2008). ICTs not only give the opportunity to have easy access to information from various sources, but also facilitate resource sharing between and among various organizations apart from improving the status of the Library and Information Science profession. Gama further stated that, the significance of ICTs in Nigerian libraries 5 cannot be over-emphasized. However, the application of the ICTs can be said to be low when compared with what is happening in developed countries of the world. The importance of ICTs in various aspects of library activities and service can be understood from the above. But conscious efforts need to be done by the institutions to provide the right ICTs in order to harness these benefits. Scholars recorded a lot of benefits that library users can drive from the ICT facilities in the library. Henderson (1992) identified some of these benefits or advantages as; provision of speedy and easy access to information, provision of remote access to users, provision of round-the-clock access to users, access to unlimited information from different sources and providing more current information. Colleges of Education libraries should do everything possible to provide ICTS facilities for the benefits of their users.

Information and communication technology (ICT) in libraries is holding a strong position in every ramification of library holdings and services. The introduction of ICT in librarianship necessitated retooling and acquisition of the skills required to operate in the global information society, the librarians apart from using the ICT for selection, classification and dissemination of information in the library another important issue is using the ICT to ensure the safety of the holdings in the library. ICT is the convergence between the computer and communication technologies, ICTs are technologies used to communicate and to create, manage, safeguard and distribute information. Such technologies includes computers, the internet, telephone, television, radio and audiovisual equipment. However, this 2 definition has been expanded to include any device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge. These devices include but not limited to radio, television, cellular phones, computer hardware and software, network hardware and software, satellite systems, peripherals, connections to the internet, digital technologies and others. Also considered in the ICT are the services and applications used for communication and information processing functions associated with these devices. ICT changes the way we live, learn and work. As a result of these changes, technology tools, and creative application of technology, have the capacity to increase the quality of people's lives by improving the effectiveness of teaching and learning, the productivity of industry and government and the well-being of nations. ICT was introduced to perform library functions and provide innovative user services. Considering the meaning of ICT, Oliver and Tower (2000) view ICT literacy as the set of skills and understandings required by people to enable meaningful use of ICT appropriate to their needs. In their settings, the ICT literacy of a student is a relative measure of the student's capacity to make appropriate use of ICT for educational and learning purposes. Likewise, the ICT literacy for librarians is relative measures of the librarians' capacity to make appropriate use of ICT for information acquisition, organization, retrieval and dissemination as information professionals. This involves the level of skills needed by librarians to use computer for their work and to independently 3 function in a web-based, on-line learning environment. They also pointed out that skills/competencies still remain the underpinning elements of computer and ICT literacy and measures the extent and scope of ICT applications and uptake among different computer users. Four distinct areas of skills and expertise such as an ability to independently operate personal computer system, an ability to use software for preparing and presenting work, an ability to use the internet and its various features as communication device, and an ability to access and use information from world wide web (www) were seen as attributes of an ICT literate individual. ICT literacy skills generally is the familiarity with mobile phones, computers, the internet and other ICTs; the ability to use ICT features and applications and the ability to use ICTs to work individually or in teams. In fact, it involves the awareness of technologies and application of their relevance, use of technology for information and knowledge encompassing skills or abilities to access, retrieve, store, manage, integrate, evaluate, create and communicate information and knowledge and participate in networks via the internet and understanding that ICT acquisition and use impacts on personal and social development. Therefore, ICT literacy has a positive impact on economic life of individuals and nations. The key role of library is to provide structured access to information with the increasing reliance on ICT. Libraries are playing a significant role in implementing and moderating a country's information society agenda. Library is the focal point of learning and research activities in academic institutions

Due to its information acquisition, organization, storage, retrieval and dissemination functions to the community. The achievement of the goals of the university is paramount to the establishment of the university library. Librarians are at the threshold of these activities and are now faced with the emergence

of information technology in the scene of information exchange. This brought new tools and techniques of acquiring and handling information. To effectively serve the academic community in the ICT environment, the librarians need to move along with the new development. Librarians are those who have the care of library and its content; the work includes selection of stock, its arrangement and exploitation in the widest sense, and the provision of a range of services in the best interest of all groups of users (Prytherch, 2007). They are also involved in the coordination of activities, setting of priorities, evaluation and other managerial tasks and their involvement in the community they serve. In the present age, apart from using the new tool to fulfil the traditional roles of the library, it evolved some new practices in the profession. Some of the new developments include digital environment for information acquisition, processing and dissemination. Information is now mostly in electronic format. Library services are also affected by the new format. Oppenheim and Smithson (2009) described digital library as an information service in which all the information resources are available in computer processable form. This requires new managerial skills for the administration of the new environment (digital library). Therefore, the new era librarians that can operate in the digital or ICT environment are indispensable. Librarians are compelled to be content creators of information, web page planners and designers and internet navigators. As a result of the digital technology inroad into the profession, such nomenclatures as internet librarians, digital librarians, cyberians or weberians were attributed to the emerging librarians. These are librarians that have acquired the new literacy skills in the manipulation of the ICT tools for information service delivery to the clientele. Technology is changing rapidly and continuously, and learning to deal with it requires not just one-off mastery of processes but also adaptability. There is a developmental shift from analogue to digital librarianship. Fabeyinde (2007) stated that ICT is the fusion of information technology with that of communication while ICT literacy according to an international independent panel of experts convened by Educational Testing Services (ETS) in 2011 is using digital technology, communications tools and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society. ICT literacy evolved as a result of the technological changes brought about by the appearance of the information society and the advances made by the technological world. To be digital is to be acquainted/literate or skilled with the storage, retrieval, manipulation and transmission of information electronically. Analogue is alphabetic representation of graphics or characters. It simply means information in textual forms. An information literate librarian who applies his literacy in the acquisition, organization, retrieval and dissemination of information in textual forms is called an analogue librarian. Digital librarian is one who applies digital literacy skills in his professional roles as a librarian. Tornero (2004) emphasized that the integration of ICT into the society is demanding complex and sophisticated changes in the way people think and act. This shows that the introduction of ICT to the knowledge and information society necessitates ICT literacy. To move along with the current trend in the information world, digital literacy (ICT literacy) is indispensable. The world summit on the information society (WSIS 2003) held in Geneva in 2003 reaffirmed on a global level the need for digital literacy skills in the 21st century. It emphasized that ICT literacy policy will help to ensure that students and employers are ready for the work force of the 21st century where digital literacy will be critical to a nation's ability to compete successfully in a global information and knowledge economy. Governments are therefore, compelled to make necessary adjustments in their National information communication infrastructure policy to facilitate the provision of ICT facilities and encouragement of ICT literacy. Gbaje (2007) noted that the deregulation of the telecommunication industry and implementation of the information technology policies by the federal government of Nigeria has resulted in the proliferation of internet cafes, giving birth to a generation of internet-loving library patrons who regard the internet as a

primary source of information. He also emphasized that these online patrons are overwhelmed by information overload on the internet and are crying for help to find reliable and accurate information quickly. To achieve this, librarians are expected to be computer literate, information navigators through the superhighways, creators of innovative information systems for the collection, organization, dissemination and preservation of information and new knowledge regardless of format and designing and maintaining a library website as a platform for delivering online services.

The Availability of ICT Facilities In Libraries

In a study, Idowu and Mabawonku (1999) carried out a survey study of information technology facilities and applications in some Nigerian research and University libraries. Twenty-two libraries were purposely surveyed for this study. Nine (9) of these are research institute libraries while the remaining thirteen (13) are University libraries. Sampling was restricted to only the Nigerian government funded libraries. Two sets of questionnaire were issued to heads of libraries and librarians respectively, to investigate the types of hardware and software available for use in the libraries. The major findings reveal that all the libraries surveyed have access to computer facilities but at varying degrees. The researchers suggested that it is necessary that the government provides adequate funding for complete computerization. The study is relevant to the present research in that it is purposive sampling of government funded libraries. Ani and Bassey (2008) studied the availability and utilization of information and communication technology (ICT) in Nigerian Law Libraries for sustainable development. It is a survey design. The sample population was 44 law librarians using attendance list of a national workshop organised for law librarians on accreditation of law programmes in Nigeria held in Nigerian institute of Advanced legal studies, University of Lagos Campus, from June 21 – 23, 2005. 27 duly completed questionnaire were retrieved and used for data analysis. The findings of their study reveal that, Nigerian law libraries are currently making progress to participate in the global adoption and utilization of ICT for efficient service delivery.

Concept of Collection Security

There are many methods of ensuring that no material leaves the library without being checked out. These systems always contain a security device that is placed on the materials (including books, magazines, video cassettes, audio cassettes, CDs and DVD) as well as a detection device that is typically located at a library's exist. The detection device must be safe for magnetic media, usually have audible/or visible alarms, if desired, the audible alarm can be voice alarm. According to Brown and Patkus, (2003), "there are two major methods currently used for detection; electromagnetic and Radio Frequency Identification (RFID) RFID solutions are being designed to improve library operation/efficiency. This enhanced capability is provided by RFID tags which do not require line of sight to be read, so that books are actually handled less. The tag combines book identification and book security into one label, minimizing labeling time and cost. Patron self-checkout systems are also available to libraries that incorporate RFID technology. Patrons can process several items simultaneously and the security devices can be turned off in a matter of seconds. A patron of the RFID can be allocated for theft detection so that no other tag is required since the antitheft device is in the label, the security gates do not According to Maidabino (2010) the "issue of collection security is of growing concern to university libraries and librarians. As a consequence, there is a vast literature on a range of problems concerning collection security in university libraries". Library security management has to do with taking necessary measures to ensure that the materials available for use in the library are kept in a good condition and prevented from being stolen. Collection security management in libraries can be conceptualized to mean the overall manner in which collection security policies, programs, procedures, or measures are deployed to mitigate risk and ensure

access. 10 Ajegbomogun (2004) stated that “collection security management refers to a process designed to protect library collections against un-authorized removal or loss”. This involves protecting resources against disasters as well as thieves or intruders. Libraries must be safe from security threats and vulnerability. University library collections are broad and varied. University libraries support the educational community through access to the collections. Borrowing privileges is an important means of giving access to library collection for personal, educational, and socio-economic advancement. Da Veiga and Eloff (2007) also contributed that “Information security governance is the manner in which information security is deployed”. Ameen and Haider (2007) opined that “access to collection is important as this service has supported scholarship in the humanities, sciences and social sciences and remains the key to intellectual freedom”. Ugah (2007) also considers “collection security breaches as formidable obstacles to information access and use. Such acts are serious problems that can result in user dissatisfaction”. He identifies major security issues in libraries to include: theft and mutilation; vandalism; damages and disaster; over borrowing or delinquent borrowers; and purposefully displacing arrangement of materials. Disruptive behavior is another security issue in libraries. As a number of studies reviews (Lorenzen, 1996; Momodu, 2002; Ajegbomogun, 2004) acknowledge that “disruptive or criminal behavior can cause security 11 problems in the library. Difficult patrons include those who are intoxicated or using drugs, mentally disturbed, and some juvenile users”. Momodu (2002) asserts that “libraries have faced varying degrees of delinquency in the use of their resources. The extent of this problem varies from one library to another, but seems to be universal”. The literature on collection security shows that security breaches often happen when the library premises are left unsecured. Oder (2004) maintains that “security measures such as supervision, patrolling, and surveillance are lacking in libraries and keys are kept unsecured, if not in plain sight of the users”. Thomas (2000) notes that “the major challenge for new or renovated space is to incorporate flexibility while providing a safe and secure library environment” Atkins and Weible (2003) believe that “successful inventorying process helps identify missing items; however it may be dependent on the size of the library’s collection”. They proposed using interlibrary loan (ILL) data failure cases to identify materials missing from a library’s collection instead. Brown and Patkus (2007) stressed that “university libraries must ensure that access and storage areas for collection are arranged and monitored for quick and easy inspection. Non-return of library materials is a threat to the effective use of resources”. Udoumoh and Okoro (2007) suggest that “libraries create policies to ensure library resources are used effectively”. 12 Disasters are a security issue that threatens library collections. Aziagba and Edet (2008) identify “disasters as natural and man-made. We have little or no control over natural disasters, which come usually as a result of flood, landslides, earthquake, storm, cyclone, or hurricane”. All of these have been experienced by universities in different countries. Flood and water damage are particularly threatening to library collections. Shuman (1999) describes “flooding as abnormally high water flow, and it is generally conceded to be the most destructive and costly natural disaster libraries can experience”. According to Evans, etal. (1998), “disasters can destroy thousands of volumes within a short time. Insect infestation, environmental factors, and human causes constitute a serious security threat and may have devastating consequences”. There is a need for constant security measures, such as vigilant staff and user education, to handle security threats cause by this type of disaster. Brown (2007) suggests “coordinated policies to address all these threats”. Nkiki and Yusuf (2008) observe that “information is an essential part of a nation's resources and access to it a basic human right”. Thanuskodi (2009) asserted that ‘information is not only a national resource but also a medium for social communication. With declining budgets and higher subscription cost, it is becoming difficult to meet the demands of library users”. Libraries should therefore ensure the security and safety of

their collections. Maidabino (2010) 13 contributed that, “these problems indicate the need to determine the current state of collection security management in academic libraries”. Library and information managers must have a clear vision and focus on the contemporary reality of security breaches in university libraries, especially those targeting the collections. This is one of the many things librarians should concern themselves with; if they are to successfully manage a flourishing and efficient library. Nature of Book Thefts and Mutilation in Academic Libraries Mutilation is the act of destroying or removal of an essential part of library materials as to render it useless. These could be as a result of bending of corner of paper or inserting pencil or biro into pages. Also opening of books back to back, tearing of relevant pages etc. Aliyu (2004) defined theft “as the total removals of library materials from the library without the normal procedures, either by the library users, library staff or both of them”. Utah (2004) defines mutilation and theft of library materials as “deliberate removal or attempted removal of library materials from the library without their being checked out”. Also, successful unauthorized removal of library materials from the library, failure to return materials to the library is also considered to be theft of library materials. Ifidon (2000) in his own opinion stated, “Mutilation and theft in libraries is a menace that has persisted, 14 and it is indeed a global problem, the worsening state of libraries in Nigeria appears to have aggravated its intensity and the consequent negative impact”. Hendrik (2004) stated that most academic libraries, however, suffer from a debilitating disease (sick). The quiet but insidious mutilation of their periodical collections not only drains badly needed financial resources but also frustrates and frequently infuriates their patrons. Thus the magnitude of the problem is such that any insight leading to a reduced rate of mutilation would lead to substantial monetary loss, not to mention reduced frustration and anger on part of library staff and innocent patrons. Students do not consider mutilation as a severe offence. The great majorities, who are unconcerned about getting caught, feel mutilation is either not a crime or a minor misdemeanor and stated that a fine paid to the library should serve as a penalty. This assessment of students perception yield an image of students as relatively unconcerned about mutilation; they assume it is relatively trivial and easily repaired and in general they are unaware of the great costs and efforts involved in this problem. Abifarin (1997) examined the problem of securing library materials in Nigeria university libraries in general and the University of Agriculture, Abeokuta Nigeria in particular. Information of the study was drawn from literature records available at the readers’ services department of university of agriculture Abeokuta (UNAAB) library. Amongst important findings, it was 15 found that among the various users groups, students, (96.6%) topped the list of culprits as far as book theft and mutilation concerned. In a similar study, Aina (2004) investigated the factors responsible for the vandalization of books in sokoto state of Nigeria. He surveyed five hundred (500) university students using social survey research; the method of collection in used was a questionnaire. The finding revealed that only expensive books were stolen or mutilated. James (2005) found that “books were vandalized during examination period”. Afolabi (1993) also added that “damages are caused by library users, insects and other animals and also by climatic conditions including hazards, she emphasized that recent studies have indicated that the greatest agent that deface books and cause wear and tear on library materials are human beings which are library users/ patrons”. Isaac (2008), carried out an investigation on the prevalent rate of book theft in academic society especially academic libraries, he evaluated the rate at which book theft and mutilation are plaguing academic libraries in Nigeria and to proffer some measures for curbing the menace. In his research, a total of 120 copies of questionnaire were distributed to professional librarians, library officers and library porters (security staff) in four (4) different academic institutions in Ibadan, Ogbomoso and Oyo state, in Nigeria. Seventy eight (78) 16 copies were returned and found useful (a response rate of 65%). He reported that reference materials, periodicals such as journals,

newspapers and magazines are mostly affected. The results from the analysis of responses showed that most of the academic libraries investigated agreed that book theft and mutilation are serious problems facing their collection. Causes of Book Theft and Mutilation of Library Materials Various writers have expressed their view on what contributes to the cause of different forms of abuse in the library. However, many researchers base their argument on economics depress and insecurity as the main cause of abuse of library materials. These include Ajegbomogun (2004), Agboola (2001), and Bello (1997) among others. Bello (1998) conducted a study on theft and mutilation in technological university libraries in Nigeria, revealing that there is a lack of security in university libraries. Users resorted to delinquent behavior because demand outstripped the supply of library materials. This result in competition for resources, which invariably tempts users to steal, mutilates, or engages in illegal borrowing. Lorenzen (1996) also observes that “collection mutilation takes many forms, ranging from underlining and highlighting text, tearing and or 17 removing pages, and tampering with the content. Lorenzen identifies several causes for mutilation, including: Students' dissatisfaction or unfamiliarity with library services A lack of knowledge of replacement costs and time A lack of concern for the needs of others Few students think of library mutilation and theft as a crime”. Abifarin (1997) contributed that “students steal or mutilate library materials because of the following reasons: Scarcity of library materials Selfishness on the part of some students Financial constraint High cost of learning materials” Nwalo (2003) also asserted that, “a major problem encountered in library security is that the security department of the parent body (in the case of academic and special libraries) insists on providing security personnel for the library. These security men are loyal to the security department and not to the library authority. This situation makes it difficult for the librarian to control security matters in his library as his orders may be flouted” Moreover, the security personnel posted to the library are often not literate enough to identify library materials and prevent them from being 18 stolen. They are always gullible as library users often play on their intelligence. Library security will definitely be enhanced by the deployment of trained library personnel at the security posts. Devices for Book Theft and Mutilation in the Libraries According to Nwamefor (1974), quoted by Nwalo (2008) outlined the following as book theft devices in the libraries: Concealment of books in clothes; library thieves could conceal book in their clothes before wading through the security post Mutilation of books by tearing off important pages Throwing books out through the window Borrowing a book and using the date-due slip to smuggle out books many times over Walking out with library books when security is not alert Volunteering to be searched so that he or she will be thought to be innocent and so be allowed to go away unsearched with a concealed library materials Collusion with library security personnel who may be unduly influenced. Afolabi (2007) and Tefera (2008) stated that the following factors constitute user delinquent in the library:

Using chemicals to clean off library ownership stamps in books and removing date due slips. Removing the jacket cover and preliminary pages of books so that those books cannot be identified. Stealing other registered library user borrower's tickets and using them to borrow books. Users conniving with some library staff such that a user can be issued with more tickets than allowed by the library. User borrows a book legally, goes out of the library, removes the date slip, comes back to the library, removes the date slip of the book intended to be stolen, uses a gum to affix the date due slip to create the impression that it is a legally borrowed book and takes the stolen book out of the library. Several library materials could be stolen this way until it is a time to return the book that was legally borrowed need to be attached to a central system or interface with the library's central database. According to Brown and Patkus (2003), some of these features are also available on an electromagnetic detection system when used in combination with a barcode. This type of system is limited, however, since

the barcode must be visible to the detector to identify the materials and the electromagnetic device with a barcode system does not allow for any additional information to be stored in the tag if desired.

Electronic Access Control

Electronic access technology is the best system for controlling access to library building, facilities, resources and rooms. Authorized people are allowed to enter a controlled area by automatically unlocking of the door. Plastic access cards are inexpensive and software can be programmed to restrict access to certain areas while recording the time, date and location of authorized and unauthorized access. According to Dean (2004), “for extra security, access control can be used in conjunction with video surveillance to control and monitor large collections and equipment’s.” Access cards can be integrated as photo ID cards for library employees and can be used as temporary keys for library clientele to have access to restricted areas. The access system can also be used for monitoring employee time and attendance, security patrols of the property and can limit access to sensitive areas, information or equipment. Electronic access control system enhances safety and protects valuable library assets. Access control solution range from simple authorized access systems to advanced close circuit monitoring and exception reports delivered through secure internet connections. The most popular types of cards is the magnetic strip cards, which looks like a credit card and carries two or more tracks of information on the magnetic stripe, these can be used for access control and other services. Dean (2004), asserts that the proximity card is more expensive but is also more durable an easier to use. For internal use, a close range type is used; for car parking entrance, a longer range of up to one yard or so is possible. Proximity card readers can be hidden behind a wall surface for aesthetic purposes, with just a marker on the wall. Other available card readers include bar code readers and RFID readers.

Paul (2009) stated that entry keypads can also be included within access control system for entry without a card or in addition to the card. Biometrics entry systems are available included fingerprint recognition, palm recognition, and scanning system for high security measure.

Securing the Library and information Resources Using Video Surveillance

Video surveillance and closed-circuit television (CCTV) systems serve as a way to monitor and record security, deter crime and ensure safety. Advances in CCTV technology and reduction in cost have also made video surveillance a cost effective management tool for library facilities. McCahill and Norris (2002) noted that “libraries can use closed-circuit television (CCTV) to identify visitors and employees, monitor work areas, deter theft and ensure the security can also use to monitor and record evidence on clientele and staff misconduct in the library. CTv systems are quickly becoming one of the most important and economic security and safety tools available to libraries. The key steps when considering the designing a CCTV system for library according to McCahill and Norris (2002), includes:

Determine the primary application of the CCTV system * Define the layout and characteristics of the control area(s) of the library building * Decide on camera type and features * Determine the best location for viewing monitors * Determine the best method of signal transmission * Decide on the type of recording/archival equipment for the system

According to Jodhar and Kulkami (2000), “The primary purpose of a CCTV system are detection, observe, monitor and record observation, provide real time information for detection identification,

recording, provides after the fact material for assessment, analysis and review, usually with overlaid time, date and location information.

Securing the Library and Information Resources Using Surveillance camera

CCTV cameras use small high definition color cameras, but by linking the control of the cameras to a computer objects can be tracked semi-automatically. According to Bannister et al... (2009), the technology that enable this is often referred to as VCA (video content analysis) and is currently being developed by a large number of technology company around the world and can be adopted by the library for the purpose of securing their resources. These current technologies enable the system to recognize if a moving object is a moving person or a crawling person. It can also deter mine the movement of people i.e staff and users within the storage area of the library as to how they are moving and whether they are assessing library resources or just reading. Based on this information, the system developers implement features such as blurring faces of “virtually wall” that block the sight of a camera where it is not allowed to film. It is also possible to provide the system with rules, such as for example “sound the alarm whenever a person is walking close to the shelf area of the library without authorizes access. Marcus (2007) asserted that “VCA also has the ability to position people on a map by calculating their position from the images”. It is then possible to link many cameras and track people through the library building. This can also be done for forensic purposes where a person can be tracked between cameras without anyone having to analysis any hours of film. According to Marcus (2007), these surveillance motion detection imaging and camera can be used to monitor the following places in the library premises:

- * Monitor driveway to the library building
- * Monitor the parking area of the library
- * Monitor the library shelf areas
- * Monitor the library equipment, such as library computers located in each offices
- * Monitor the movement of staff and users within the library
- * Monitor the exchange of materials within the library, etc.

Measures to Control Crimes In The Library

Libraries adopt various types of charging system, such as Brown Charging System, etc. Some libraries have computerized their charging system to make their operations faster. Whichever system a library adopts, it is one of the means of detecting stolen books since due dates are always on the date due slip of each book borrowed. Commenting further ion the importance of library charging systems in the library, Olanlokun and Salisu (1985:45) noted that:

Some charging systems enable the libraries to know the statistics of use or circulation of some books. This could be used to weed. The system also identifies some books that are missing and makes provision for their replacement if they are needed.

In order to minimise the occurrence of crimes in the library, exit controls are necessary. Some libraries use turnstiles and guards to slow down movements of users and check patrons going out at the exit. Libraries in developed countries mostly use electric security system at their exits.

Nancy (2009) wrote extensively on the use of electronics to combat book theft and discussed at length the experiences involved in their installation in the United States. While Revill (1979:38-44) observed that avoiding application of keys, use of keys by few staff members, restriction of entry with briefcases or bags label on drawers, use of uniformed porters, efficient and cheap photocopying services, liberal loan services and the use of electronic devices will help reduce criminal activities in the library.

Although most academic libraries have library committees which assist in regulating the activities of the library, only very little is done on security and crime prevention in libraries. For example, the librarian of the library under study claimed that activities such as annual stock taking, revisiting the borrowing system, reinforcing the security gadgets and even increasing the number of security personnel have never been considered in the library. The purpose of conducting annual stocktaking in libraries is to enable the library managers (the librarians) know the number and rate of their loss of books in the libraries. Stocktaking also enables them to remove the catalogue cards for those books that are missing and also arrange for their replacements. Commenting on stocktaking in libraries, Neal (1995:84) observed that:

Many libraries hold an annual check of their book stock and this enables catalogue cards for any books that are missing to be withdrawn, and so ensuring the accuracy of the catalogue as a guide to the stock. Also, any missing book replaced, or alternative titles purchased, any marked increase in the annual rate of loss is noted and thought given to possible remedies. It was discovered that the library under study does not carry out this important exercise

Using ICT to improve Security in the Library

According to Encyclopedia (2009), quoted by Adamu (2006), “security refers to device designed to guard library materials against crime, accident, disasters, fire and 20 attacks”. Aina (2004) added that, “library materials must be safe; hence security devices need to be provided by library to ensure that materials are not stolen or mutilated”. Abifarin (2007), Allen (2008) and Bello (2010) reported high rate of book theft, mutilation and misplacing of books in Nigerian academic libraries. They suggested measures to reduce the problems, which include tightening security at library entrances and exits, expulsion of students involved in theft and mutilation, provision of multiple copies of heavily used text, reducing the cost of photocopying, and periodic searching of students’ hostels and staff. Which include the following: Constant supervision Searching users at the library exit Unannounced searching of students hostels Posting security personnel of integrity to the library 21 Condemnation of theft through mass media Vigilant against mutilation by library staff Better educated security men to detect stolen books through thorough physical examination of books. In most libraries circulation is the first place that a user will encounter upon entering the library. Circulation does the registration of users, charging and discharging of users, reservation of materials when the need arises, answering questions from users, filling, calling over-due materials, fining a defaulter etc. these and other important functions of circulation could be best carried out effectively with the ICTs utilization. Ani (2007) opined that with the utilization of ICTs in circulation section of academic library a record keeping and documentation would be enhanced effectively, overdue notices are automatically computed, the security of the materials would be enhanced through the ICT facilities that are connected in the circulation to check those users who want to smuggle out library materials. Some other misbehavior of library users such as mutilation of some pages of materials would be easily detected at the circulation desk through a circuit television installed at the circulation desk etc.

All library windows should be gauzed to make it very difficult for books to be thrown out. McComb (2007) stated that video surveillance and closed-circuit television (CCTV) systems serve as a way to monitor and record security, deter crime, and ensure safety. The author suggest that, libraries can use CCTV to identify visitors and employees, monitor work areas, deter theft, and ensure the security of the premises and other facilities. The system can also be used to monitor and record evidence on clientele and employee misconduct. In the same vein Ramana (2010) contributed that “Closed Circuit Television (CCTV) uses in the libraries can enhance the ability to control the book thefts and tearing off the pages from the books and magazines”. Preservation of Library Information Resources Since library has been employing different kind of security systems to save library resources from theft and mutilation; there is also a need to secure or preserve these information materials in other to prolong their life span and meet the need of the clientele.

The security of information/knowledge is essential to its effective exploitation or use. As knowledge expands, the need to organize it and to provide adequate security becomes more pressing. This study describes how the information bearing materials of the library can be secured using traditional and electronic measures. Literature were reviewed on the concept of information resources security, features of a good security measures (traditional and electronic),

Securing the library resources traditionally, securing the library using telecommunication, benefits of securing the library resources, problems associated with the use of electronic security system in the library, and ways of solving problems with the use of electronic security system in the library.

Benefits Associated with the Use of Telecommunication in Securing Library and Information Resources

Libraries are essential cultural institution, we use them at every stage of our lives, and their facilities make large bodies of books, research materials, and the internet available to the public for universal use, video surveillance security cameras and other security measure are great tools

for libraries, as they can protect large areas of space and allow librarians and staff to immediately check in on concerns from the reference desk or office. According to McCahill and Norris, (2002), the major benefits of using electronic security system in the library are:

1. Maximum security: Patrons of all ages and types use libraries every day. Security cameras places around the library can help to keep safe while reading, researching and browsing as well as the information resources they are using.
2. Prevent theft: Every part of a library’s collection is valuable. A video surveillance system working in conjunction with a barcode and magnetic book control system could help prevent book theft and monitor the move of books and other resources as it moves from one user to another.
3. Flexibility: If video systems allow users to place cameras where they are needed, and reconfigure them in a whim libraries, especially those that host community events, author readings or children book clubs, could greatly benefit from the flexible security that IP video provides
4. Remote monitoring: Video surveillance systems that use the cameras and network recorder (NVR) allow libraries to broadcast their surveillance footage over the internet. This allows management and security to check in on libraries at any time should security concerns arise, the broadcast function could also be to archive speakers or special events at the library.

Problems of Using Electronic Security System in Library

As telecommunication or electronic security systems has greatly helped the libraries to provide maximum security for their resources and equipment, so also, there are problems and difficulties faced by libraries and information Centre's on the use of telecommunication security systems and devices. As stated by Voters (2007), the problems are:

1. Inadequate fund: Libraries and information Centre's lack the financial; resources to purchase and install the telecommunication security systems and devices that can help to protect the level of security required as a result of the budgetary allocations from their parent organization.
2. Lack of literate or skilled personnel: libraries and information Centre's lack skilled personnel that can operate, teach and instruct the use of these telecommunication security systems even when they are made available in the library.
3. Poor power supply: These telecommunication security systems or devices need electricity to power them and due to the poor power supply, these systems often time are not working and as such are incapable of performing their expected task of securing the library and its collection.
4. Hardware and software failure: This is major threat to the use of telecommunication security system in the library. When there is software failure or hardware breakdown that may require the need for an engineer who may not be available to put them in place as at when due, then the library system and its collections is at risk.
5. Libraries in remote areas do not have access to telecommunication security system because they cannot afford the money to purchase the devices and cannot adequately cater for them.

Ways of Solving Problems with the Use of electronic security system in the Library

According to Voters (2007), the factor militating against the effective use of telecommunication security systems and devices can be subdued in the following ways:

1. Enlightening the parent organization on the importance of using telecommunication security devices and systems in the library: The librarian and information experts should take out time to educate their parent organization on the benefits associated with libraries and information Centre's in the use of telecommunication security systems and devices so that the library parent body can release adequate fund which will be used for the purchase of telecommunication security devices in the library.
2. User education: This is very important, because most of the staff do not know how to operate telecommunication devices, especially the security system devices that requires extra skills. As a result of these, there is need for user education so that all library staff will be taught on how to operate these devices to how they are mounted and where.
3. Making available an organizational based engineers: An organizational based engineer should be made available who will always be available to take up issues in case of hardware breakdown or software failure.
4. Making available in the library alternative power supply i.e. a stand-by generator that can serve the whole library when there is failure in power supply.

Summary of Literature Review

Since the essence and usefulness of telecommunication security system and devices in libraries are to help provide maximum and adequate security for the library employees, resources and equipment as well patrons and the entire library building, it is necessary that these telecommunication systems and devices are made available in the library. The usefulness of telecommunication security systems and devices in the library cannot be over emphasized due to the following benefits: maximum security for library building and resources, prevention of theft in the library, flexibility, remote monitoring etc.

However, the use of telecommunication security system and devices require budgetary management support, staff support, software development and hardware upgrade for the attainment of the set goals thereby appealing to the library management to release funds that is needed to accomplish this task. Based on this, the researchers advice libraries to:

1. Ensure that sufficient/adequate is allocated to libraries for the purchases, development and maintenance of telecommunication security systems and devices. 2. Organize user education programme and in-service training for the staff on how to use telecommunication security system and devices to secure resources. 3. Organize seminars, workshops, conferences etc. for the board members, directors, administrator and management of libraries and information Centre's in other to create awareness among library authorities about the advantage and benefits of using ICT facilities and telecommunication security systems.
2. Employ competent and experienced in-house computer engineers who can handle the repairs of the telecommunication security systems and devices in case of software failure or hardware breakdown.
5. Make available a power generating plant i.e. generators that can supply electricity in case of power failure

RESEARCH METHODOLOGY

This chapter deals with the methodology employed for the study under the following sub-headings: research design, population of the study, the sample, sampling technique and sample size, the instrument for data collection, the administration of the instrument and the method used for data analysis.

Research design Employed

In this research, case study research was used as the research methodology. This techniques has been used by many researchers and it yields positive result.

Lamnek (2005) “ the case study is a research approach, situated between concrete data taking techniques and methodological paradigms”. Therefore, case study method is considered most appropriate for this study because it will allow researcher to gather information about target population.

Population of the Study

According to Kerlinger (2004) population “typically is a well-defined set of people” population refers to total number living in a particular place or performing activity. According to Ujo, A (2000) defined population as “ a specific number of people limited within a particular area of research or investigation.. The population of the study consists of the entire staff of both Umaru Musa Yar’adua University library and that of Al-Qalam University Library, including the professional and non professional staff of the two libraries. Below is a table showing the population of this study;

Umaru Musa University, Katsina, Library

Table 3.1 Population of study: Distribution by Gender

SN	Staff	Number	Percentage
1	Male	35	87.5 %
2	Female	5	12.5 %

3	Total	40	100 %
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Table 3.2 Population of the Study: Distribution by professionals, Para-professional or non-profession

SN	Staff	Number	Percentage
1	Professional	13	32.5 %
2	Non-professional	12	30 %
3	Para-professional	15	37.5%
4	Total	40	100 %

Sample Size

Sample size is a portion of the population which is selected for the purpose of the study. According to Ifidon (2007) if the portion of the research population is selected to be studied rather than studying the whole population, that portion selected is called sample. Similarly, Okeet el (2005) maintains that, the portion of population that shares all the characteristics of the population is called sample.

From the table 3.1 to 3.4 above shows the picture of the population dimension of each library, so therefore a percentage of the population will be choosing to represent the entire population for this study.

The determination of the sample size is as important as the selection, but it should not be done arbitrarily. This raises the questions as to what constitutes an adequate sample size to the beginning researcher. However, literature provides that sample of 30% of the population is quite adequate for behavioral research to ensure representation of the population (Afolabi, 1993).

Sample and Sampling Technique

Simple random sampling strategy will be used in this study because the population studied is large; therefore to make the study feasible and to generalize the results to the entire population, the simple random sample was used. In addition, the simple random sample has been found to be one of the best methods for inferential statistics (Babbie, 2001). Moreover, Abba (2007) citing Osuala (1982) maintained that, random sampling is the technique of drawing a portion of population, that all numbers of the population have equal chance of being selected. This method is unbiased in the sense that no member of the population has anymore chance of being selected than any other member.

Data Collection Instrument

The nature of any research work determines the method to employ in collecting data; hence, questionnaire will be employed in this research, which will be distributed to the respondent personally by the researcher.

The History of data Collection is Questionnaire

Questionnaire is a device for getting answers to questions by issuing a form which the respondent fill by himself easily (Abba, 2007) Questionnaire was chosen because according to Osuala (2001) in Fari (2007) “it permits wider coverage for a minimum expense both in money, time and effort. It also affords not only wider geographical coverage but reaches individuals who are normally difficult to contact...” In their assertion, Osuala (1993) observed that questionnaire is a very popular instrument for research in the field of library and information science and seeks opinion of people on a series of issues pertinent to research problem.

Validity and Reliability of the Research Instrument

Validity refers to the degree of which a measuring instrument measures what it is expected to measure while Reliability is the extent to which a particular technique applied repeatedly to the same object, would yield the same result each time (Babbie 2001; Ifidon 2007). In order to ascertain the validity and reliability of the variables in the research instrument subjected to colleagues, research experts and supervisor for validation. Revisions are made on the instrument based on their comments and suggestions before it will be administered to respondents.

Administration of the Research Instrument

The researcher will administer the research instrument personally to the respondents in the sampled, in order to ensure timely collection of data. Best and Khan (1989) assert that questionnaire administered personally to a group of individuals have a number of advantages as the person administering the instrument has the opportunity to establish rapport and explain the meaning of items that might not be clear. That availability of the number of respondents in one place makes possible an economy of time and provide high proposition of useful responses.

Method of Data Analysis

Bellamy (2012) explains that analysis methods “are procedures for manipulating data so that the research questions can be answered, usually by identifying important patterns”. In quantitative research which is used in this study, data analysis basically involves the use of statistical procedures (Antonius, 2003; Bellamy, 2012); unlike thematic analysis usually use in qualitative research (Collins et al., 2012)

The data collected is analyzed using statistical measures like frequencies and percentages. These methods used in order to achieve both reliable and valid result. The frequencies indicates the number of responses and the percentages gives the proportions responses so as to compare and analyze the number of respondents that the questionnaires were been administered.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Introduction

The major purpose of this chapter is to present and analyze the data collected from the respondents on the use ICT for Information Resource Security in Umaru Musa Yar'adua University Library and Al Qalam University Library. The data were collected and will be analyzed in order to provide answer to the research questions in chapter one.

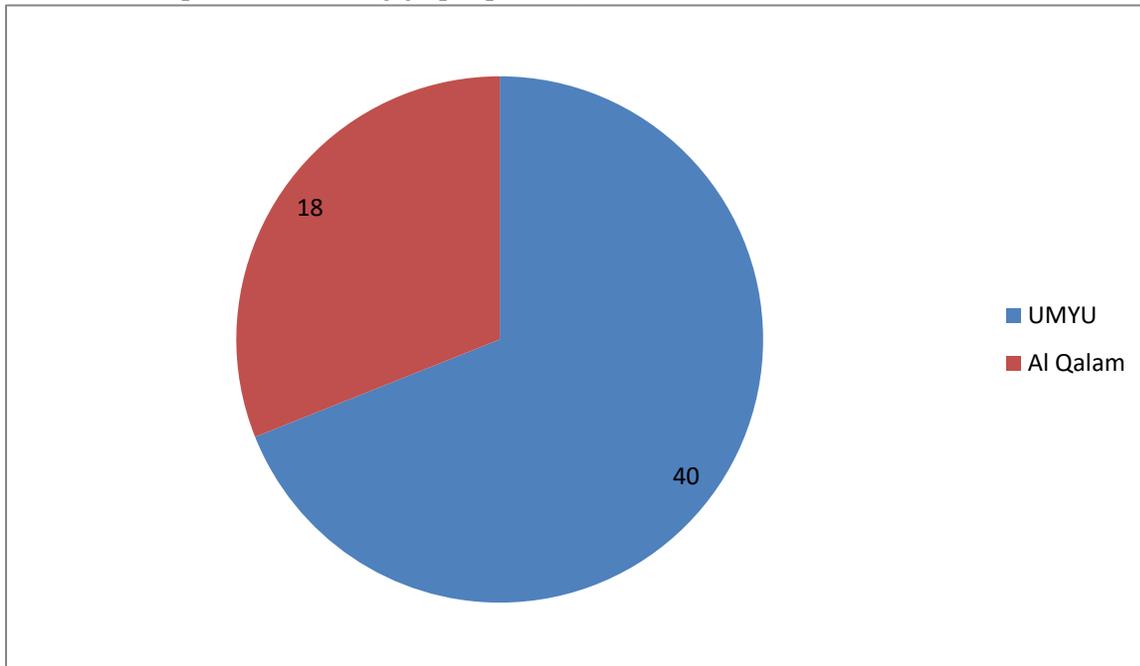
Fifty eight (58) copies of the questionnaire were administered and fifty-five (55) were retrieved. The data gathered with the questionnaire are presented in tables, showing the frequency and percentage of responses offered by the respondents in both Umaru Musa Yar'adua University and Al Qalam University.

Response Rate

Table 4.1 Response Rate according to institution

	Questionnaire issued	Percentage (%)
UMYU	40	69%
Al Qalam	18	31%
Total	58	100%

Below is the representation using graph (pie chat)

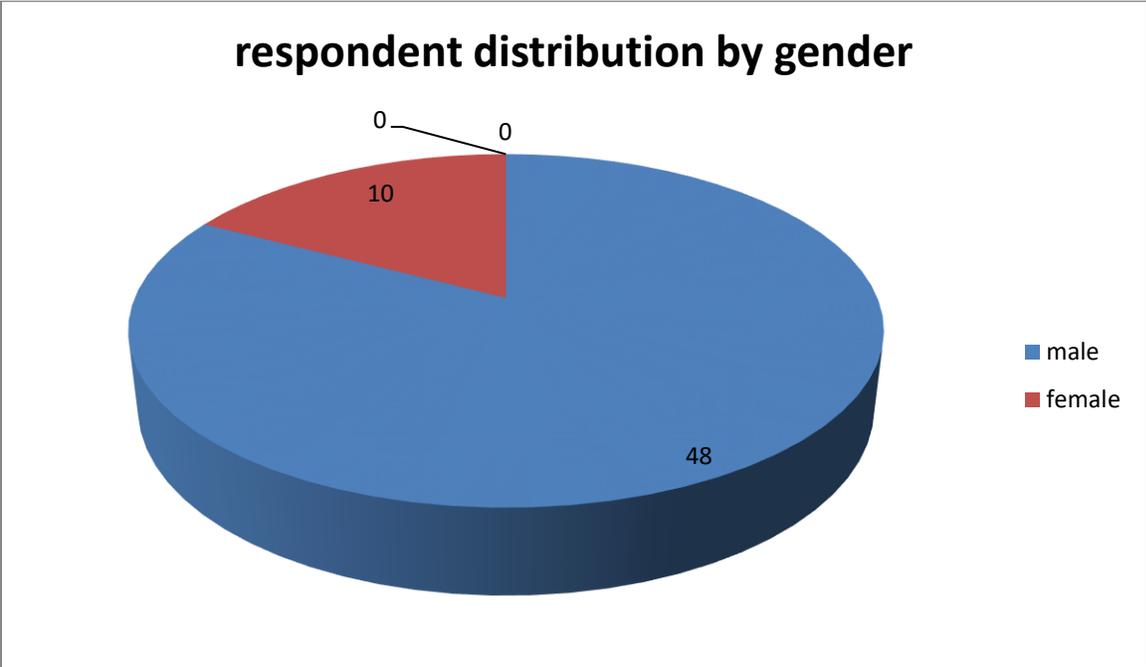


Presentation and Interpretation of Data

Table 4.2: Gender Distribution of Respondents

Sex	Frequency	Percentage (%)
Male	48	83%
Female	10	17%
Total	58	100%

Table 4.2 indicates that 48 respondents were male representing 83% while 10 others were female representing 17%. This research work simply means that there is a significant proportion of representation by both genders although the male gender is higher than the female.



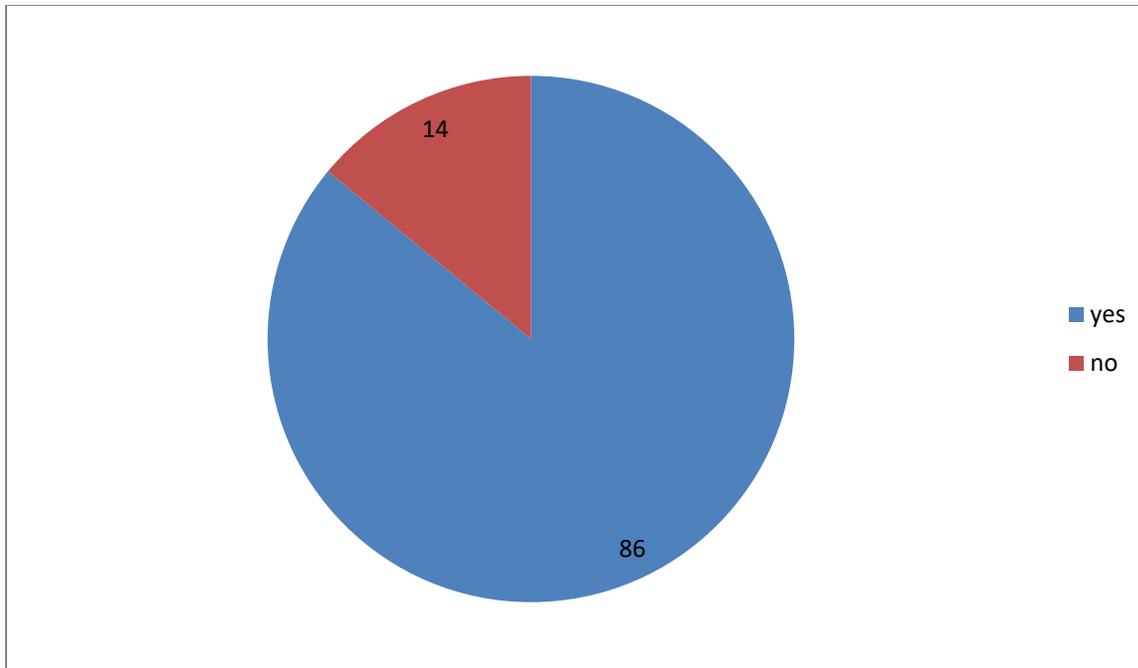
It shows that the dominance respondents from both libraries are male whereas the female respondent are the minorities in the two libraries studied.

Table 1: Age Categories of Respondents

Table 2: have you ever encounter any issue of stealing information resources in your library

SN	ITEM	FERQUENCY	PERCENTAGE
1	Yes	50	86%
2	No	8	14%

The data in the table above shows clearly that there are issues of security challenges as regards to information resources safety in both Umaru Musa Yar’adua University library and that of Al Qalam university library, this is evident by the level of positive responses from the respondents in both libraries where Yes is having 50 frequency equivalent to 86% whereas no is having 8 frequency equivalent to 14%. This is further demonstrated in the chat below



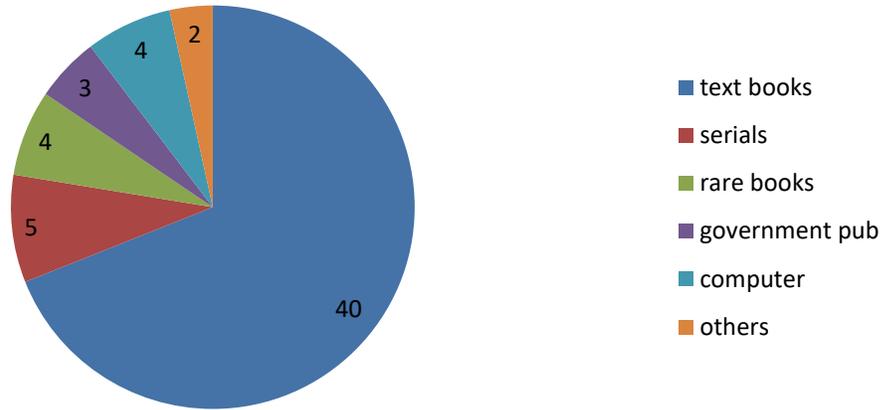
To this end, stealing of library materials by the students can be said to be rampant in both libraries, this of course is a challenge for both library management and the university at large.

Table 3: Nature of the material/ that the students normally steal

SN	ITEM	FREQUENCY	PERCENTAGE
1	text books	40	68%
2	Serials	5	9%
3	Rare books	4	7%
4	Government publication	3	5%
5	Computer	4	7%
6	Others	2	4%

The respondents here went further to indicate the types or nature of information resources that are vulnerable for stealing by the students in the surveyed libraries, in which text books in both library has the largest share having 40 (68%) followed by serials with 5 (9%), rare books and computer has 4 (7%) both while government publication which is only available in UMYU library has 3 (5%) and other information materials that are not mention here all together has 2 (4%)

nature of materials normally steal by students



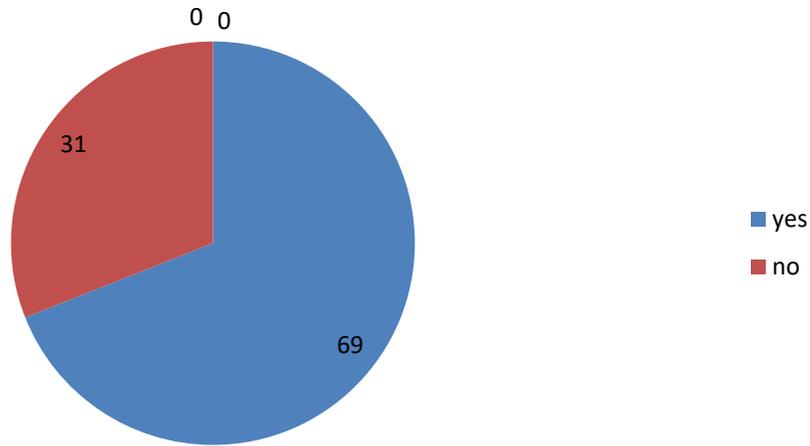
This data clearly indicates that the information resources which is mostly readily available for use by the users which is text books is mostly vulnerable to stealing in both libraries, indeed this is a major setback to the development of the libraries which only achieve if it is stock with information resources, by extension serving the information needs of the users

Table 4: Do you use ICT Facilities to prevent theft/ stealing library materials in your library?

SN	ITEM	FREQUENCY	PERCENTAGE
1	Yes	40	69%
2	No	18	31%

UMYU library is the only library that uses ICT facilities to prevent stealing of library materials and improve security among the two libraries under study, as such all the respondents from UMYU library 40 (69%) indicates positive response **yes** to the use of ICT facilities in their library for security of information resources improvement, while the respondents from Al Qalam 18 (31%) all indicates negation **no** in the use of ICT facilities for security purpose in their library.

using ICT facilities for securin information resources in the library

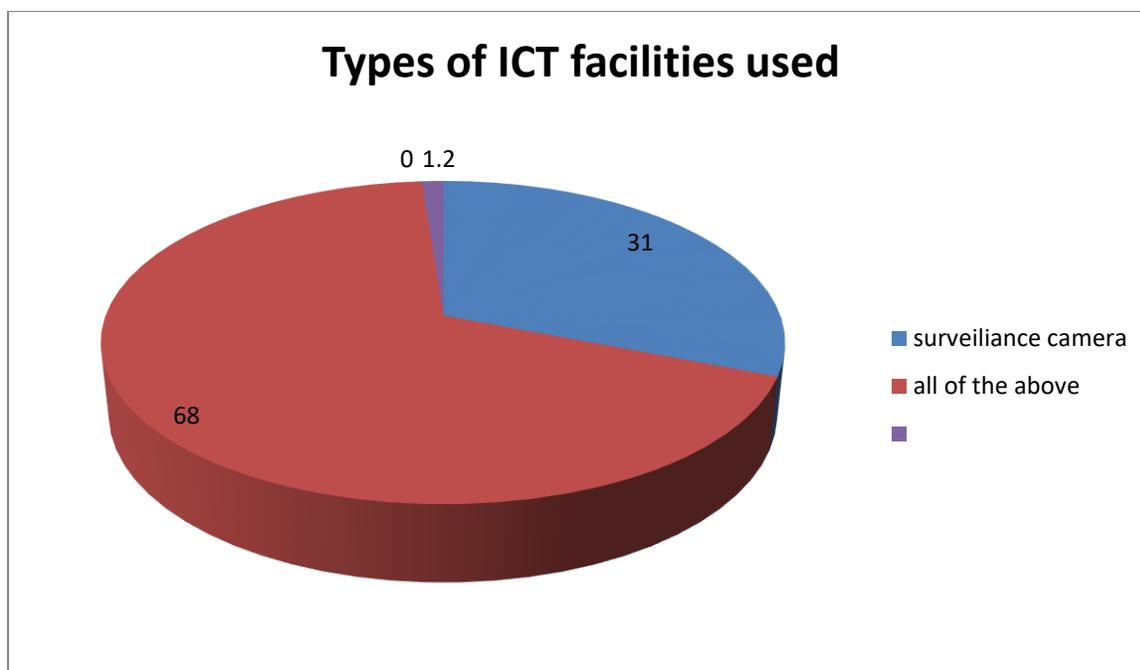


It could be understood here that UMYU library has improved and follow the trend of the time in using ICT to secure its resources while Al Qalam library is still left behind as it is yet to start using ICT facilities for the same purpose which indicates that the library is still using the manual system of searching the users at the entrance of the library as a means of securing the library materials.

Table 5: if yes what are the types of ICT facilities you use in preventing theft/stealing of library materials?

SN	ITEM	FREQUENCY	PERCENTAGE
1	Scanner		
2	Surveillance Camera	18	31%
3	RFID		
4	All of the above	40	68%

The table above indicates that 68% of the respondents show that their library use all the ICT facilities mentioned in this section to improve security of the information resources, again all the respondents that indicates the use of such ICT resources are from UMYU library. Whereas those from Al Qalam University library indicates the use of surveillance camera only. This clearly shows that Al Qalam University library is left far behind in terms of using ICT to improve security of information resources. This can be presented in chat below:



It can be concluded here that UMYU library has a better security strategy for their information resources than Al Qalam library.

Table 6: Do you encounter any problem while using ICT facilities to prevent theft and improve security of library materials in your library?

SN	ITEM	FREQUENCY	PERCENTAGE
1	Yes	48	83%
2	No	10	17%

Majority of the respondent 83% indicates that they encounter problem while using ICT to improve security of information resources in their libraries.

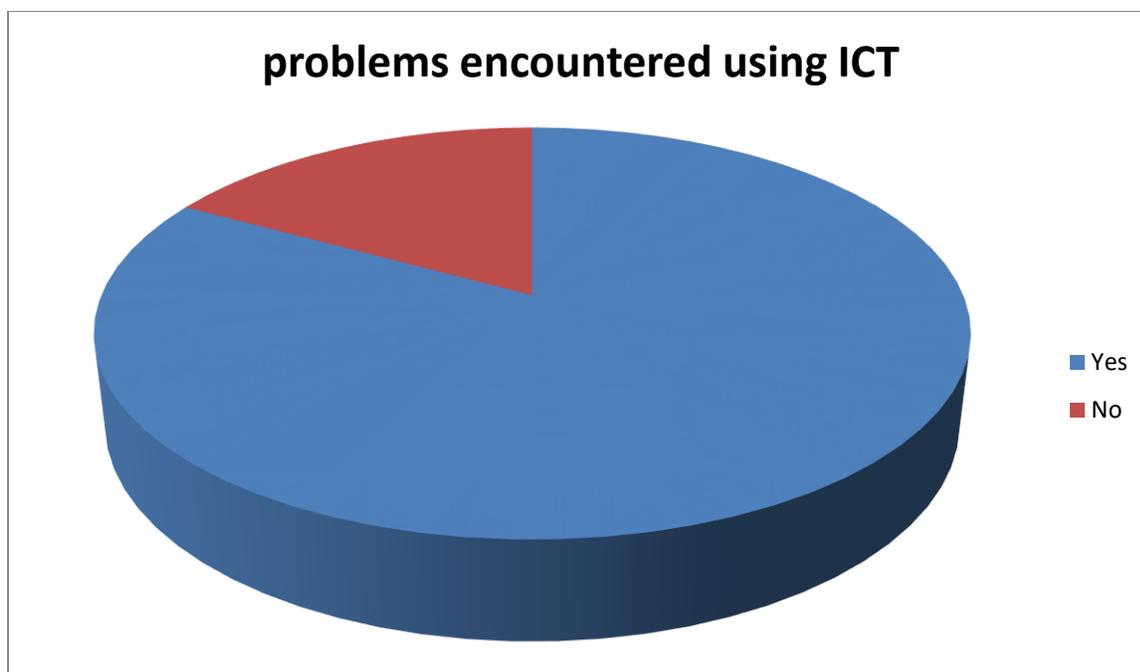
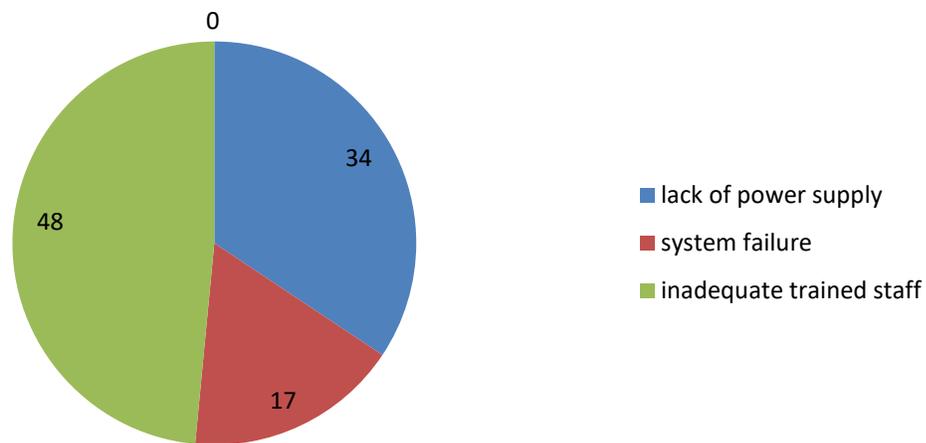


Table 7: if Yes, what are the nature of problems you encounter in using ICT facilities for prevention of theft and security improvement in your library?

SN	ITEM	FREQUENCY	PERCENTAGE
1	Lack of power supply	20	34%
2	System failure	10	17%
3	Inadequate trained staff	28	48%
4	All of the above		

The table above show the nature of the problems encountered by the libraries while using ICT facilities for securing their information resources in which the respondents indicates lack of power supply to have 20 (34%), system failure has 10 (17%) and inadequate trained staff has the highest figure of 28 (48%). As shown in the chart below:

nature of problems you encounter in using ICT facilities

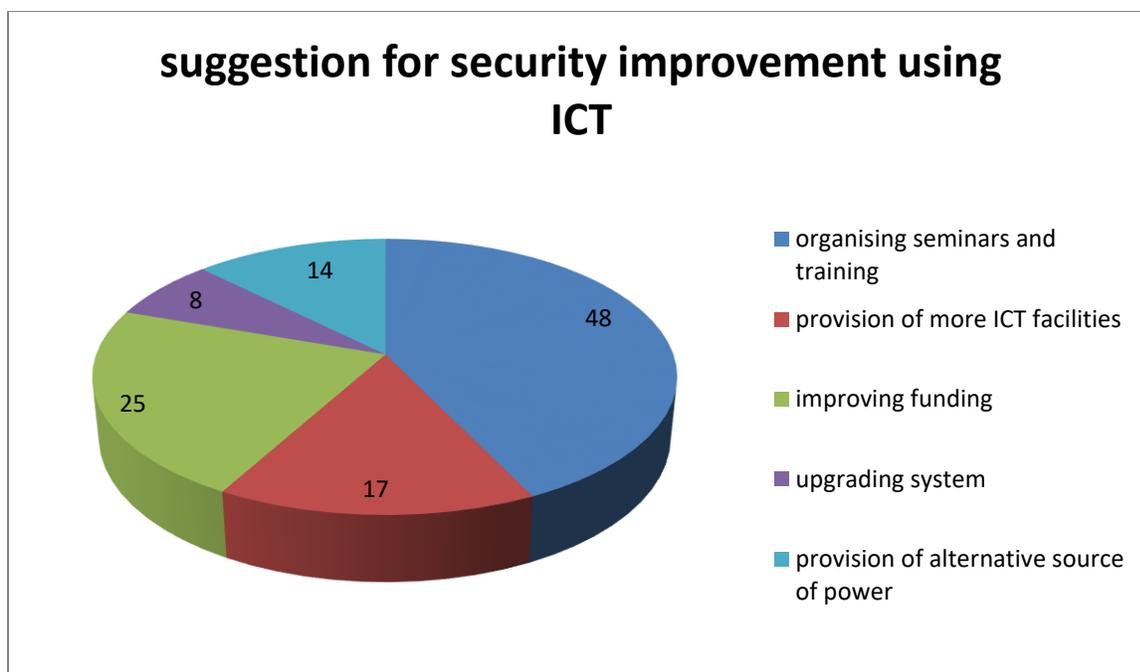


The nature/types of the problems described here is almost common to both libraries, but inadequate trained staff that will manage the ICT facility has the highest percentage, in this regard, it means even the available ICT facilities will not be used adequately to achieve its purpose.

Table 8: In your opinion, what are the possible solutions encountered in using ICT facilities in preventing theft and security improvement in your library?

SN	ITEM	FREQUENCY	PERCENTAGE
1	Organizing seminars and training	28	48%
2	Provision of more ICT facilities	10	17%
3	Improve funding for ICT facilities	15	25%
4	Upgrading system to avoid failure	5	8%
5	Provision of alternative source of power	8	14%

The table above describe the possible solution to the various problems encountered using ICT to improve security of information resources in the two sister libraries as presented by the respondents. Organizing seminars and training of staff was indicated by the respondents to have 28 (48%), provision of more ICT facilities for improving security 10 (17%), and improve funding for ICT facilities 15 (25%). So also upgrading systems to avoid failure is rated by the respondent to have 5 (8%) and provision of alternative source of power 8 (14%).



Summary, conclusions and recommendations

Summary

The security of information resources as we learn in this study is essential to its effective exploitation or use. As knowledge expands, the need to organize it and to provide adequate security becomes more pressing. This study describes how the information bearing materials of the library can be secured electronic measures. Literature were reviewed on the concept of information resources security, features of a good security measures (electronic), Securing the library using telecommunication, benefits of securing the library resources, problems associated with the use of electronic security system (ICT) in the library, and ways of solving problems with the use of electronic security system in the library.

In the study, we also understand that information security, is the practice of defending information and information bearing materials from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take (electronic, physical, etc...). The definitions of Information Security suggested in different sources are summarized below:

1. "Preservation of confidentiality, integrity and availability of information. Note: In addition, other properties, such as authenticity, accountability, non-repudiation and reliability can also be involved."
2. "The protection of information bearing materials i.e. book and non-book materials and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide confidentiality, integrity, and availability."
3. "Ensures that only authorized users (confidentiality) have access to accurate and complete information (integrity) when required (availability)."
4. "Information Security is the process of protecting the intellectual property of an organization." (Pipkin, 2000).

7. "Information security is the protection of information, information bearing materials and minimizes the risk of exposing information to unauthorized parties." (Venter and Eloff, 2003)

The study also identifies that information and information resource security using ICT means protecting information, information systems or books from unauthorized access, damage, theft, or destruction (Kurose and Ross, 2010). The major element of any electronic or telecommunication or ICT security include burglar protection, collection security, electronic access control and video surveillance.

There are different ways of classifying the types of sensor systems. Sensor can be active or passive, convert or visible, volumetric or line detection. They can also be defined by their mode of application. According to Jadhara and Kulkarni (2000) active sensors transmit some type of energy and detect a change in the received energy created by the presence of motion of the intruder. Passive sensors detect some type of energy emitted by the intruder, or detect a change of some natural field of energy caused by the intruder. Convert sensors are hidden from view and visible. Sensors are in plain view. Volumetric sensors detect intrusion on a volume of space, where line detection sensors detect intrusion across a line. Lynn (2001) also asserts that "Door and Window Contacts can also be used to trigger and alarm whenever library doors or windows are opened without authorization." They can be attached to recess within the door or window frame to detect movement.

Collection Security

There are many methods of ensuring that no material leaves the library without being checked out. These systems always contain a security device that is placed on the materials (including books, magazines, video cassettes, audio cassettes, CDs and DVD) as well as a detection device that is typically located at a library's exist. The detection device must be safe for magnetic media, usually have audible/or visible alarms, if desired, the audible alarm can be voice alarm.

According to Brown and Patkus, (2003), "there are two major methods currently used for detection; electromagnetic and Radio Frequency Identification (RFID) RFID solutions are being designed to improve library operation/efficiency. This enhanced capability is provided by RFID tags which do not require line of sight to be read, so that books are actually handled less. The tag combines book identification and book security into one label, minimizing labeling time and cost. Patron self-checkout systems are also available to libraries that incorporate RFID technology. Patrons can process several items simultaneously and the security devices can be turned off in a matter of seconds. A patron of the RFID can be allocated for theft detection so that no other tag is required since the antitheft device is in the label, the security gates do not need to be attached to a central system or interface with the library's central database. According to Brown and Patkus (2003), some of these features are also available on an electromagnetic detection system when used in combination with a barcode. This type of system is limited, however, since the barcode must be visible to the detector to identify the materials and the electromagnetic device with a barcode system does not allow for any additional information to be stored in the tag if desired.

Electronic Access Control

Electronic access technology is the best system for controlling access to library building, facilities, resources and rooms. Authorized people are allowed to enter a controlled area by automatically unlocking of the door. Plastic access cards are inexpensive and software can be programmed to restrict access to certain areas while recording the time, date and location of authorized and unauthorized access. According to Dean (2004), "for extra security, access control can be used in conjunction with video surveillance to control and monitor large collections and equipment's." Access cards can be integrated as photo ID cards for library employees and can be used as temporary keys for library clientele to have

access to restricted areas. The access system can also be used for monitoring employee time and attendance, security patrols of the property and can limit access to sensitive areas, information or equipment.

Electronic access control system enhances safety and protects valuable library assets. Access control solution range from simple authorized access systems to advanced close circuit monitoring and exception reports delivered through secure internet connections. The most popular types of cards is the magnetic strip cards, which looks like a credit card and carries two or more tracks of information on the magnetic stripe, these can be used for access control and other services. Dean (2004), asserts that the proximity card is more expensive but is also more durable an easier to use. For internal use, a close range type is used; for car parking entrance, a longer range of up to one yard or so is possible. Proximity card readers can be hidden behind a wall surface for aesthetic purposes, with just a marker on the wall. Other available card readers include bar code readers and RFID readers.

Paul (2009) stated that entry keypads can also be included within access control system for entry without a card or in addition to the card. Biometrics entry systems are available included fingerprint recognition, palm recognition, and scanning system for high security measure.

Securing the Library and information Resources Using Video Surveillance

Video surveillance and closed-circuit television (CCTV) systems serve as a way to monitor and record security, deter crime and ensure safety. Advances in CCTV technology and reduction in cost have also made video surveillance a cost effective management tool for library facilities. McCahill and Norris (2002) noted that “libraries can use closed-circuit television (CCTV) to identify visitors and employees, monitor work areas, deter theft and ensure the security can also use to monitor and record evidence on clientele and staff misconduct in the library. CCTV systems are quickly becoming one of the most important and economic security and safety tools available to libraries. The key steps when considering the designing a CCTV system for library according to McCahill and Norris (2002), includes:

Determine the primary application of the CCTV system

- Define the layout and characteristics of the control area(s) of the library building
- Decide on camera type and features
- Determine the best location for viewing monitors
- Determine the best method of signal transmission
- Decide on the type of recording/archival equipment for the system

According to Jodhar and Kulkarni (2000), “The primary purpose of a CCTV system are detection, observe, monitor and record observation, provide real time information for detection identification, recording, provides after the fact material for assessment, analysis and review, usually with overlaid time, date and location information.

CCTV cameras use small high definition color cameras, but by linking the control of the cameras to a computer objects can be tracked semi-automatically. According to Bannister et al... (2009), the technology that enable this is often referred to as VCA (video content analysis) and is currently being developed by a large number of technology company around the world and can be adopted by the library for the purpose of securing their resources. These current technologies enable the system to recognize if a moving object is a moving person or a crawling person. It can also deter mine the movement of people i.e. staff and users within the storage area of the library as to how they are moving and whether they are assessing library resources or just reading.

Based on this information, the system developers implement features such as blurring faces of “virtually wall” that block the sight of a camera where it is not allowed to film. It is also possible to provide

the system with rules, such as for example “sound the alarm whenever a person is walking close to the shelf area of the library without authorized access. Marcus (2007) asserted that “VCA also has the ability to position people on a map by calculating their position from the images”. It is then possible to link many cameras and track people through the library building.

This can also be done for forensic purposes where a person can be tracked between cameras without anyone having to analyze any hours of film. According to Marcus (2007), these surveillance motion detection imaging and camera can be used to monitor the following places in the library premises Monitor driveway to the library building

- * Monitor the parking area of the library
- * Monitor the library shelf areas
- * Monitor the library equipment, such as library computers located in each office
- * Monitor the movement of staff and users within the library
- * Monitor the exchange of materials within the library, etc.

Conclusion

Libraries are essential cultural institutions, we use them at every stage of our lives, and their facilities make large bodies of books, research materials, and the internet available to the public for universal use, video surveillance security cameras and other security measures are great tools for libraries, as they can protect large areas of space and allow librarians and staff to immediately check in on concerns from the reference desk or office. According to McCahill and Norris, (2002), the major benefits of using ICT/electronic security systems in the library are:

- a. **Maximum security:** Patrons of all ages and types use libraries every day. Security cameras placed around the library can help to keep safe while reading, researching and browsing as well as the information resources they are using.
- b. **Prevent theft:** Every part of a library’s collection is valuable. A video surveillance system working in conjunction with a barcode and magnetic book control system could help prevent book theft and monitor the move of books and other resources as it moves from one user to another.
- c. **Flexibility:** If video systems allow users to place cameras where they are needed, and reconfigure them in a whim libraries, especially those that host community events, author readings or children book clubs, could greatly benefit from the flexible security that IP video provides
- d. **Remote monitoring:** Video surveillance systems that use the cameras and network recorder (NVR) allow libraries to broadcast their surveillance footage over the internet.

This allows management and security to check in on libraries at any time should security concerns arise, the broadcast function could also be to archive speakers or special events at the library.

The study also concludes that ICT otherwise called electronic security systems has greatly helped the libraries to provide maximum security for their resources and equipment; so also, there are problems and difficulties faced by libraries and information Centres on the use of ICT security systems and devices. As observed by the researcher the problems are:

1. **Inadequate fund:** Libraries and information Centres lack the financial resources to purchase and install the telecommunication security systems and devices that can help to protect the level of security required as a result of the budgetary allocations from their

parent organization.

Lack of literate or skilled personnel: libraries and information Centre's lack skilled personnel that can operate, teach and instruct the use of these telecommunication security systems even when they are made available in the library.

Poor power supply: These telecommunication security systems or devices need electricity to power them and due to the poor power supply, these systems often time are not working and as such are incapable of performing their expected task of securing the library and its collection.

Hardware and software failure: This is major threat to the use of telecommunication security system in the library. When there is software failure or hardware breakdown that may require the need for an engineer who may not be available to put them in place as at when due, then the library system and its collections is at risk.

5. Libraries in remote areas do not have access to telecommunication security system because they cannot afford the money to purchase the devices and cannot adequately cater for them.

Recommendations

Base on this study, the researcher recommends that the use of ICT for securing the library can be enhanced if the factor militating against the effective use of the ICT security systems and devices is solved through;

1. **Enlightening the parent organization on the importance of using ICT security devices and systems in the library:**

The librarian and information experts should take out time to educate their parent organization on the benefits associated with libraries and information Centre's in the use of telecommunication security systems and devices so that the library parent body can release adequate fund which will be used for the purchase of telecommunication security devices in the library.

2. **User education:**

This is very important, because most of the staff do not know how to operate ICT devices, especially the security system devices that requires extra skills. As a result of these, there is need for user education so that all library staff will be taught on how to operate these devices to how they are mounted and where.

3. **Making available an organizational based engineers:**

An organizational based engineer should be made available who will always be available to take up issues in case of hardware breakdown or software failure.

4. Making available in the library alternative power supply

a stand-by generator that can serve the whole library when there is failure in power supply.

Since the essence and usefulness of ICT security system and devices in libraries are to help provide maximum and adequate security for the library employees, resources and equipment as well patrons and the entire library building, it is necessary that these ICT systems and devices are made available in the library. The usefulness of ICT security systems and devices in the library cannot be over emphasized due to the following benefits: maximum security for library building and resources, prevention of theft in the library, flexibility, remote monitoring etc.

However, the use of ICT security system and devices require budgetary management support, staff support, software development and hardware upgrade for the attainment of the set goals thereby appealing to the library management to release funds that is needed to accomplish this task.

Specifically, based on this, the researcher's advice libraries are to:

1. Ensure that sufficient/adequate is allocated to libraries for the purchases, development and maintenance of ICT security systems and devices.
2. Organize user education program and in-service training for the staff on how to use ICT security system and devices to secure resources.
3. Organize seminars, workshops, conferences etc. for the board members, directors, administrator and management of libraries and information Centre's in other to create awareness among library authorities about the advantage and benefits of using ICT facilities and security systems.

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