
SECURITY OF INFORMATION RESOURCES IN UNIVERSITY LIBRARIES: A CASE STUDY OF SOUTH-EAST NIGERIA

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Abstract

This study analyzed the security of information resources in federal university libraries in south-east Nigeria. The study used a descriptive survey, and the population comprised 172 librarians from five federal university libraries in south-east. Given the small size of the target population, a census sampling technique was applied to sample all the 172 librarians. The data was collected using an online questionnaire. The survey was administered to 172 librarians, with 135 of them returning it, thus, the response rate was 73%. The mean and standard deviation were calculated using SPSS version 29 after the data had been analyzed with frequency counts and simple percentages. The findings revealed that physical access control, ID cards and access authorization, fire prevention and suppression equipment, CCTV cameras, the use of security guards, registration at the gate, and alarm systems were some of the security measures that were implemented, with a low level of implementation of 3m exist detection systems and RFID technology. The findings also show that librarians have moderate-level awareness about security protocols with significant limitations in staff development programs, regular training, and the communication of best security practices. Librarians encounter significant challenges in securing information resources, such as inadequate funding, lack of trained personnel to implement security protocols, cyber threats such as hacking or malware, outdated or malfunctioning security equipment, and theft/vandalism of physical resources. Based on the

findings, the researchers recommended, among other things, that university libraries in south-east Nigeria require greater financial support to purchase modern security equipment, maintain their infrastructure and train their security personnel.

Keywords: Security, Information Resources, Federal University Libraries, South-east

Abstrak

Studi ini menganalisis keamanan sumber daya informasi di perpustakaan universitas federal di Nigeria bagian tenggara. Studi ini menggunakan survei deskriptif, dan populasinya terdiri dari 172 pustakawan dari lima perpustakaan universitas federal di wilayah tenggara. Mengingat ukuran populasi target yang kecil, teknik pengambilan sampel sensus diterapkan untuk mengambil sampel seluruh 172 pustakawan. Data dikumpulkan menggunakan kuesioner daring. Survei diberikan kepada 172 pustakawan, dengan 135 di antaranya mengembalikannya, sehingga tingkat responsnya adalah 73%. Rata-rata dan standar deviasi dihitung menggunakan SPSS versi 29 setelah data dianalisis dengan penghitungan frekuensi dan persentase sederhana. Temuan menunjukkan bahwa kontrol akses fisik, kartu identitas dan otorisasi akses, peralatan pencegahan dan pemadaman kebakaran, kamera CCTV, penggunaan petugas keamanan, registrasi di gerbang, dan sistem alarm adalah beberapa langkah keamanan yang diterapkan, dengan tingkat implementasi sistem deteksi keluar 3m dan teknologi RFID yang rendah. Temuan ini juga menunjukkan bahwa pustakawan memiliki kesadaran tingkat menengah tentang protokol keamanan dengan keterbatasan signifikan dalam program pengembangan staf, pelatihan reguler, dan komunikasi praktik keamanan terbaik. Pustakawan menghadapi tantangan signifikan dalam mengamankan sumber daya informasi, seperti pendanaan yang tidak memadai, kurangnya personel terlatih untuk menerapkan protokol keamanan, ancaman siber seperti peretasan atau malware, peralatan keamanan yang usang atau tidak berfungsi, dan pencurian/vandalisme sumber daya fisik. Berdasarkan temuan tersebut, para peneliti merekomendasikan, antara lain, bahwa perpustakaan universitas di Nigeria bagian tenggara membutuhkan dukungan keuangan yang lebih besar untuk membeli peralatan keamanan modern, memelihara infrastruktur mereka, dan melatih personel keamanan mereka.

Kata kunci: Keamanan, Sumber Daya Informasi, Perpustakaan Universitas Federal

1. INTRODUCTION

University libraries are libraries set up by their parent institutions to provide diverse and relevant information resources for teaching, learning, and research. Information resources are sources and tools that contain information and knowledge that educators, researchers, learners, and decision-makers require in various disciplines. These

resources are in many forms, such as print and electronic as well as multimedia, that communicate thoughts/ideas, research, feelings/opinions, among others (Abdrahman, 2022). This includes books, magazines, digital and online databases, manuscripts, audiovisual instructional aids, and other educational materials. In this regard, university libraries serve a central role in providing access to these resources, which is a major determinant in the creation of knowledge, stimulators of academic growth, and enhancement of academic performance. The value of these resources cannot be overemphasized since it supports service delivery and assists libraries to satisfy user information requirements (Ogunbodede et al., 2020).

Due to the high costs involved in purchasing these resources, university libraries must take relevant steps or strategies to protect their valuable collection from illicit handling, improper use, weather conditions, intentional mis-shelving, arson, and outright theft. Information security refers to the actions taken or strategies put in place to prevent information resources from being stolen, damaged, or unauthorized access among other things. Edonu (2017) defined information security as the processes, procedures, techniques, or measures employed in the protection of information materials in the library. Security measures can be physical, e.g. surveillance., access control, and theft prevention, or digital, e.g., cybersecurity, closed circuit television (CCTV), modern monitoring systems, cameras, theft detection systems, and alarm systems at the gate (Agboola & Aduku, 2019). The objective is to protect the confidentiality, integrity, and accessibility of information resources so that they could continue to function for the required purpose. The protection of these resources also safeguards the university's ideological and scholarly heritage, consequently ensuring that scholarly work produced by the institution is easily accessible to the future generation. Also, the security measures applied in the library improve people's trust and make the library a safe place for getting the information needed.

Librarians have a tremendous responsibility to ensure that the library's information resources are protected, and thus they should have the knowledge of the various measures required to protect these resources. Knowledge of security measures helps librarians to notice possible risks, implement measures to prevent them, and train users on how to handle and use the information resources correctly. Lack of awareness of the various security measures by the librarians might endanger access to these resources. Research by Kavak (2024) demonstrates that increased information security awareness leads to specific and positive improvements in compliance with information security requirements. Librarians must participate in ongoing training to learn about proven safety protocols alongside the latest security technologies and methods.

Conversely, in spite of the significance of information resources security, the researchers observed that information resources in Nigeria's most university libraries face multiple security threats, including theft, mutilation, unauthorized access, cyberattacks and vandalism. This raises the question if poor information resource protection in many Nigerian university libraries stems from insufficient security strategies and policies or if

they face other operational challenges. This issue demands examination because poor management of these challenges might result in extensive consequences affecting information resource usability, accessibility, and the quality of essential information resources vital for academic operations at the university library. Library resources need protection to maintain both resource credibility and academic excellence promotion capabilities. The research evaluates contemporary security systems in university libraries, assessing librarians' understanding of security methods and the obstacles they encounter in providing effective security practices in federal university libraries in south-east Nigeria. Research into security practices and librarians' awareness levels and security of information resource challenges in federal university libraries in south-east Nigeria will develop protective measures for safeguarding important information resources while securing their uninterrupted usage by future scholars.

Statement of the Problem

The security of information resources remains an essential necessity because it preserves scholarly materials, enabling confidentiality and accessibility for educational and research needs. University libraries across Nigeria face a multitude of security challenges that threaten their resources including theft, mutilation, unauthorized access, cyberattacks, and vandalism. These threats represent important perils to valuable information resources, which limits the ability of libraries to effectively provide relevant resources to support their university communities. This raises the question of whether university libraries across Nigeria lack sufficient security measures and policies or if operational issues are preventing proper resource protection. If these information resources are not properly preserved, it could lead to a considerable threat to the quantity, continued use, and quality of information resources necessary to support the university's academic mandate. To overcome these security threats, it is important to use various security measures, as well as new security technologies and techniques, to preserve valuable information resources for posterity. This study therefore assessed identify the type of security measures adopted by university libraries, the level of awareness and training of librarians about security practices, and the particular difficulties faced by university libraries in south-east Nigeria in the security of information resources. Thus, the present work aims to support the development of effective security approaches so that significant information resources would continue to be available to future generations of scholars.

Research Objectives

The specific objectives are:

- To identify the type of security measures implemented in federal university libraries in south-east Nigeria.
- To determine librarians' level of awareness on security measures in federal university libraries south-east Nigeria.

- To ascertain the challenges affecting the security of information resources in federal university libraries in south-east Nigeria.

Research Questions

The following questions guided the study:

- What are the security measures implemented in federal university libraries in south-east Nigeria?
- What is librarians' level of awareness on security measures in federal university libraries south-east Nigeria?
- What challenges do librarians encounter in the security of information resources in federal university libraries in south-east Nigeria?

2. LITERATURE REVIEW/THEORY

1) Literature Review

This section presents some selected literature on security measures implemented in university libraries, librarians' level of awareness on security measures, and the challenges affecting the security of information resources in these libraries.

Security measures adopted by university libraries

Urhiewhu et al. (2018) analyzed protection techniques of academic Nigerian libraries against property theft at chosen educational institutions in Nigeria. The researchers employed survey research design to conduct their study while using secondary data resources about security measures. The interview method serves as the data collection instrument within this study. All academic libraries implement stamping procedures on specific pages while security staff, together with porters, operate at library entrances to monitor library user entry and exit. The Federal University of Science and Technology Library, Akure, stands alone as the institution using CCTV as a security measure. The security measures for guarding library resources and destructive behaviour were analyzed by Hampwaye (2022) across different libraries of Zambia. The researchers utilized the exploratory study design combined with purposive sampling to choose their respondents. Security measures implemented by various libraries consist of surveillance cameras, alarm systems, 3M book detection systems, generators and, staff training, and security personnel deployment for library protection. A survey of higher learning institutions libraries showed that half of them use technology-based security measures, although they need to better develop their organizational security system and maintain their security equipment. Echem & Okwu (2023) studied Donald Ekong Library at the University of Port Harcourt in Rivers State Nigeria, to assess their security aspects and sustainable service provision. The adoption of descriptive survey design served as the research approach. Thirty-one staff members working at Donald Ekong Library, University of Port Harcourt, served as the study participants. All respondents were selected by using the census sampling technique. Simple percentages in charts as well as mean scores with standard

deviation were utilized to analyze the data. In addition, data visualization occurred through charts. The security systems at Donald Ekong Library within the University of Port Harcourt include smart card access control, CCTV, fire extinguishers, the installation of window burglar alarms and door intrusion alerts, panic alarms, perimeter alarm systems, and RFID authentication. Ekong and Ogunjimi (2019) conducted research to determine the security systems used in Nigerian university library facilities. Nigerian university libraries used electronic security systems consisting of surveillance cameras with alarm notifications together with user identification through ID checks and circulation staff tracking and security guards to safeguard facilities while implementing marks for library resource possessions. The utility of new technologies implementing security measures for library resources at Bayelsa State Library Board was assessed by Sanni et al. (2023). There were 24 members of staff in the study population, while census sampling enabled selection of all available respondents. A research study demonstrated that the implementation of emerging technology, including RFID along with barcode systems and CCTV technology, was either less than partial or not implemented at all. Many academic libraries implement diverse security measures that combine conventional approaches with advanced technological systems. Security measures relied on surveillance cameras, alarm systems, RFID, and security personnel demonstrate evidence but require greater technology adoption along with improved management and maintenance of current systems to optimize total library protection.

Librarians' level of awareness on security measures

Fakeh et al. (2012) investigated information security awareness among academic librarians. Results from the survey demonstrated strong understanding of information security awareness. In the same vein, Oguedoihu & Adinchezor (2022) studied the security issues along with library and information services operating in two academic establishments located in South East Nigeria. The descriptive survey method was employed to study fifty-four (54) staff members of the Federal Polytechnic Library in Oko, Anambra State. The analysis showed that employees in both tertiary institution studies identified multiple security options, and management at each institution must establish sufficient resource security protocols. Kavak (2024) evaluated how academic library staff in Türkiye respond to information security awareness training in terms of their information security compliance. The investigators collected survey data from 136 academic library personnel in Turkey to conduct their descriptive survey. Information security awareness demonstrates a strong positive relationship with information security compliance according to research results. Mabawonku and Ezinwanyi (2022) conducted a study about information security awareness and information security compliance in university libraries based in south-west, Nigeria. This descriptive survey research used multi-stage random sampling to select 223 library personnel as part of its methodology. University libraries show that their personnel lack adequate information security awareness according to research findings. The existing literature shows that library staff recognize the importance

of information security but regional variations in understanding and compliance levels require specific local approaches for academic library security improvements.

Challenges in the security of information resources

Basaka et al. (2020) investigated security issues across libraries in northeastern Nigeria. Research data demonstrates destructive events happen to both printed and non-printed library materials while borrowed items frequently disappear without return and items are repeatedly stolen. The results of this study indicate that security technology devices provide minimal protection for information assets. Natural disasters, book thefts, unengaged library employees, and undesirable library security conditions, represent major security issues affecting library information resources (Abdulkadir & Danladi 2023). A study performed by Mustapha (2022) demonstrated university libraries in Kwara State encounter difficulties protecting their information resources because users do not return library items, users destroy resources instead of borrowing them or carry out theft from the library and perform unauthorized transactions. In their study, Enyi et al. (2021) found out that mismatched book shelving, book mutilation, theft, and unreported stolen materials, present numerous security issues in libraries. Lamido Sule (2023) traces information resource protection obstacles to library property theft together with insecure facilities and building setbacks from natural events and vandal activity and damaged materials and patron disturbances and workers who don't follow rules. The study by Endouware & Okwu (2023) discovered university librarians face book mutilation and book miss-shelving alongside non-return of borrowed books and impersonation and book theft as their main security challenges.

Gupta & Margan (2019) identified book theft and mutilation and, disruptive behaviour, vandalism and mis-shelving of books along with natural disasters and book humidity and microbial growth as significant information security challenges for academic libraries. Oguedoihu & Adinchezor (2022) in their study of security challenges of libraries towards their information resources, found that book mutilation, book and periodical theft, wrong shelving of books, ineffective service delivery by library staff, and lack of security personnel stationed at the library. Okorie & Nwogu (2023) listed some challenges of information security in academic libraries as fire hazards, natural disasters, cybercrimes, non-return of borrowed books, virus and worm attacks, illegal borrowing, theft, and illegal hacking of library systems. Lack of electronic security gadgets, lack of security checks, lack of security personnel in the library, inadequate staff, book theft, book mutilation, non-return of overdue books, and mis-shelving of books are information resources challenges encountered in the security of information resources in federal university library Lafia. Research demonstrates many difficulties that academic libraries must overcome when protecting their digital resources. Security challenges in academic libraries encompass theft attacks and mutilation incidents and non-returns from patrons along with mis-placed positions and how natural calamities impact facilities as well as insufficient technological defence systems. Furthermore, ineffective service delivery, poor attitudes of staff, and lack

of security personnel compound these problems. Enhancing information resource security requires academic libraries to implement technology and organizational solutions such as enhanced monitoring systems together with enhanced staff training and stronger enforcement of library policies.

2) Theoretical Framework

The research applies the Information Security Management Theory (ISMT) developed by Hong et al. in 2003. ISMT delivers an extensive framework to secure information assets through sustaining confidentiality alongside preserving information integrity and retaining information accessibility. The theory involves how an organization safeguards its data and information assets and how they are retrieved. In this context, university libraries can use ISMT to identify security threats while implementing safeguards and creating resource protection policies to defend information assets from multiple risks. ISMT highlights a systematic security management structure that integrates technological solutions with identifiable operational practices.

Application of ISMT to the Study

Types of security measures implemented in university libraries in south-east Nigeria: According to ISMT, it is essential to use multiple security controls made up of physical, technical and administrative measures for effective information resources protection. University libraries should implement physical security controls together with measures that include surveillance cameras, security personnel, access control systems with key cards or biometric scanners, and having secure storage facilities to protect library resources from unauthorized access. Digital information resources can be protected from cyber threats through technical security controls, which consist of firewalls, encryption, invasion detection systems, antivirus software, and automated software updates. The library can also implement administrative security controls through policies that determine the proper handling of information access and distribution. This involves security training programs for library staff and user access User access control, regular audits, and incident response plan.

Librarians' awareness of security measures: All personnel participating in information security management need comprehensive knowledge and continuous training according to the ISMT framework. The implementation in university libraries requires librarians to receive relevant information on threats and risks to information resources such as theft, vandalism, cyber-attacks and data breaches. There should be frequent and a comprehensive training sessions scheduled to provide librarians with updated security protocols and best procedures for information management combined with the use of various security technology devices. This comprise periodic training that helps them identify phishing activities, teach them proper handling of sensitive information and incident response procedures.

Challenges affecting the security of information resources in university libraries: Several barriers were identified by ISMT that organizations including university libraries may encounter during information resource security efforts. These challenges include a lack of financial resources, which restricts the acquisition of sophisticated security systems and the hiring of appropriate security staff. The organization will face limitations in establishing extensive physical and technical security measures. The human factor includes librarians and users' resistance to change together with insufficient education on security measures, which can compromise security efforts. Inadvertent breaching of data and improper dealing with sensitive information by human operators create substantial security threats. Human errors, which include both breaches of data through mishandling of sensitive information, can create substantial safety hazards. Modern technical advancements can make security systems and measures become outdated or less effective because of their obsolescence. University libraries may face obstacles in adopting modern cybersecurity advancements due to insufficient funds and a shortage of cybersecurity expertise. Security weaknesses in the library can emerge from inconsistent security policies as well as minimal enforcement along with non-adherence to information security standards at both local and international levels.

The application of ISMT enables this research to create structured knowledge about existing security practices among South-East Nigerian university libraries and librarian awareness and training alongside security challenges for information resources. ISMT functions as an essential theoretical model that analyzes information security management complexities, thus helping university libraries develop improved protective measures against internal and external dangers to their information assets.

3. METHODOLOGY

The study used a descriptive survey design. The study population comprised 172 librarians from the federal university libraries in south-east Nigeria. The universities include the University of Nigeria, Nsukka, Enugu State (45), Nnamdi Azikiwe University, Awka, Anambra State (23), Federal University of Technology, Owerri, Imo State (48), Michael Okpara University of Agriculture, Umudike, Abia State (49), and David Umahi Federal University of Health Sciences, Uburu, Ebonyi State (7). The sampling technique was total enumeration. The online questionnaire was the instrument used for data collection. The initial step involved distributing the online survey to librarians, and 135 librarians responded to the questionnaire, giving a response rate of 73%. Specialists from measurement and evaluation and library and information science conducted face and content validity tests to verify if the questionnaire was suitable for the research. The Cronbach's alpha result showed that the instrument reached a reliability level of 0.85. The researchers conducted data analysis using the SPSS version 29, with frequency counts and simple percentages. A criterion score of 2.5 was adopted for research questions 1-3. For research question 1, the mean scores of 2.5 and above were considered positive perceptions, and those below 2.5 were deemed negative perceptions. For research

questions 2 and 3, the mean scores below 2.5 were adjudged as disagreed, and the scores above 2.5 were adjudged as agreed. The table below is a representation of the outcome.

Findings of the Study

Section A: Demographic Information

Gender	Frequency	Percentage %
Male	74	55
Female	61	45
Total	135	100

The finding in Table 1 suggests that males made up the majority of the librarians involved in the study.

Research Question 1: What are the types of security measures implemented in university libraries in south-east Nigeria?

Table 2: Types of Security Measures Implemented in University Libraries

S/N	Types of Security Measures	SA	A	D	SD	Mean
1.	Physical access controls (e.g. locks and key system, and burglary protection)	72	48	12	3	3.4
2.	ID Cards and access authorization	75	35	18	7	3.3
3.	Fire prevention and suppression equipment	45	66	12	12	3.1
4.	Surveillance systems (e.g. CCTV cameras) are in place.	42	48	21	24	2.8
5.	Security guards employed to patrol the reading rooms	36	42	33	24	2.7
6.	Signature of every user (Gate registration)	30	45	42	18	2.6
7.	Alarm System	33	30	39	33	2.5
8.	3m Exit detection system	21	36	45	33	2.3
9.	Radio-Frequency Identification (RFID)	9	45	42	39	2.2
Grand Mean						2.8

Table 2 shows the type of security measures implemented in federal university libraries in south-east. The table suggests that the majority of librarians agreed that physical access control, ID cards and access authorization, fire prevention and suppression equipment, CCTV cameras, the use of security guards, registration at the gate, and alarm systems were some of the security measures implemented in their libraries. However, the results show a low level of implementation for advanced systems, such as 3m exist detection systems and RFID technology. Statistically, the grand mean

(2.8) is greater than the criterion mean (2.5), showing that the security measures in these libraries are moderately effective but need improvement. This highlights opportunities for librarians and administrators to strengthen security infrastructure by adopting advanced technologies and ensuring their proper implementation.

Research Question 2: What is librarians' level of awareness on security measures in south-east Nigeria?

Table 3: Librarians' Awareness on Security Measures

S/N	Librarians' Awareness on Security Measures	SA	A	D	SD	Mean
1.	Library staff are well-informed about the importance of information resource security	48	54	33	-	3.1
2.	I am aware of security policies and procedures.	39	72	18	6	3.1
3.	I know how to identify and report security incidents.	39	72	21	3	3.1
4.	I am confident in my ability to respond to security threats	27	90	15	3	3.0
5.	Security best practices are effectively communicated to all library staff	30	63	30	12	2.8
6.	Security of information resources are included in staff development programs	27	57	39	12	2.7
7.	Library staff receive regular training on security of information resources	24	45	45	21	2.5
	Grand Mean					2.9

Table 3 reveals librarians' level of awareness on security measures in federal university libraries in south-east. Table 3 reveals that all items 1-7 have mean scores that are above the criterion mean of 2.5. More so, the grand mean (2.9) is greater than the criterion mean (2.5), which shows that librarians have a moderate level of awareness of security measures. However, there are notable gaps in specific areas, particularly in areas like regular training, inclusion in staff development programs, and communication of best practices. This suggests that while foundational awareness exists, there's a need for more structured, frequent, and comprehensive initiatives to enhance overall security preparedness.

Research Question 3: What challenges do librarians encounter in the security of information resources in university libraries in south-east Nigeria?

Table 4: Challenges in the Security of Information Resources

S/N	Challenges in the Security of Information Resources	SA	A	D	SD	Mean
1.	Inadequate funding for security measures	81	42	9	3	3.5
2.	Lack of trained personnel to implement security protocols	63	63	9	-	3.4
3.	Cyber threats such as hacking or malware	60	57	9	9	3.2
4.	Outdated or malfunctioning security equipment	54	54	15	12	3.1
5.	Theft or vandalism of physical resources	50	49	24	12	3.0
6.	Unauthorized access by library users	24	60	36	15	2.7
Grand Mean						3.2

Table 4 shows the librarians encounter in the security of information resources in federal university libraries in south-east. Statistically, the grand mean (3.2) is greater than the criterion mean (2.5), and all the items 1-6 have mean scores that are above the criterion mean of (2.5). This indicate that all the listed items in Table 4 the significant challenges librarians encounter in securing information resources in university libraries in south-east Nigeria. Among these challenges, the most notable are inadequate funding, lack of trained personnel to implement security protocols, cyber threats such as hacking or malware, outdated or malfunctioning security equipment, and theft/vandalism of physical resources.

4. DISCUSSION OF FINDINGS

According to research question one, physical access control, ID cards and access authorization, fire prevention and suppression equipment, CCTV cameras, the use of security guards, registration at the gate, and alarm systems were some of the security measures that were implemented in libraries. However, the results show a low level of implementation for advanced systems, such as 3m exist detection systems and RFID technology. Strong basic security measures exist in libraries, but they have not adopted advanced security systems like 3M exit detection and RFID technology, this may be due to limited finances and technical capabilities. The dependence on traditional security methods makes libraries susceptible to contemporary security threats, therefore requiring immediate funding for contemporary safety measures coupled with staff training to improve security measures. The ISMT confirms that to make strong information resources security measures, physical controls, technical systems, and administrative practices must be implemented together. To boost security and efficiency in university libraries, administrators should provide necessary funding and prepare staff for the implementation

of advanced technologies. This result of this study is in agreement with that of Ekong & Ogunjimi (2019), which shows that some Nigerian university libraries deploy security systems such as CCTV cameras, alarm systems, checking users' library ID cards, monitoring users' activities, and stationing security guards. The study results differ from Hampwaye (2022), who documented that 3M book detection systems serve alongside other advanced technological security measures for information resource protection.

The second research question shows that librarians possess a moderate level awareness about security protocols in their libraries. However, there are significant limitations in staff development programs, regular training, and the communication of best security practices. Although basic security awareness exists, there is an urgent requirement for established, frequent, and extensive programs to improve security preparedness at a more advanced level. The reported security gaps indicate troublesome organizational problems that may threaten the success of security strategies in the library environment. The necessary solutions include systematic policy development, increased funding with continuous educational development to improve security, and enhanced risk management abilities of librarians. The finding aligns with that of ISMT, which emphasizes the necessity to provide librarians with recent security knowledge and skills to help them detect and minimize security risks. The research findings show two important gaps that violate ISMT principles because best security practices are not clearly communicated to staff members, and staff development programs do not include security training. To establish an advanced security environment in libraries, there is a need to address both deficiencies. This result is not in agreement with that of Fakeh et al. (2012), who reported a high level of information security awareness among librarians.

Librarians encounter significant challenges in securing information resources in university libraries, according to research question three. Some of these challenges include inadequate funding, lack of trained personnel to implement security protocols, cyber threats such as hacking or malware, outdated or malfunctioning security equipment, and theft/vandalism of physical resources. This shows that these libraries encounter major operational and structural difficulties in providing effective security for both their digital and physical assets. The lack of appropriate solutions to address these security issues will create problems for libraries to protect their information assets as well as ensure safe access to these resources. The study findings support the concepts of ISMT, which recognizes different types of obstacles that organizations including university libraries, may experience while protecting their information resources. ISMT shows the need to focus on funding resources and personnel education and infrastructure development with continuous risk management practices to protect information assets effectively. The research results support the work of Okorie and Nwogu (2023), who established multiple information security obstacles in academic libraries. Academic libraries encounter multiple security challenges, which consist of cybercrimes, theft, illegal library system hacking, insufficient electronic security devices, and inadequate library security staff training.

5. CONCLUSIONS AND RECOMMENDATIONS

The results revealed that physical access control, ID cards and access authorization, fire prevention and suppression equipment, CCTV cameras, the use of security guards, registration at the gate, and alarm systems were some of the security measures that are implemented in these libraries, librarians have moderate-level awareness regarding security protocols in their libraries with significant limitations in staff development programs, regular training, and the communication of best security practices, and librarians encounter significant challenges in securing information resources. Some of these challenges include inadequate funding, lack of trained personnel to implement security protocols, cyber threats such as hacking or malware, outdated or malfunctioning security equipment, and theft/vandalism of physical resources. Based on the findings, the researchers recommended that university libraries in south-east Nigeria require greater financial support to purchase modern security equipment, maintain their infrastructure and train their security personnel. Librarians need to receive ongoing training whose goal is to boost their expertise in security protocols, including cybersecurity and emergency response methods. The physical security of university libraries in south-east Nigeria can be improved through updated equipment maintenance of fire suppression systems, CCTV cameras, and alarm systems, alongside robust cybersecurity protection through firewalls and antivirus software and database updates. Additional security measures can be achieved by hiring competent staff that includes IT experts together with security officers. Entry should be controlled through enhanced policies that involve biometric systems combined with RFID technology. Library users should be part of awareness programs that build trust between them and library staff for resource protection. Security consultants, together with relevant stakeholders, should help universities develop tailored security solutions and execute implementation. All facilities need emergency contingency plans that include routine drills for effective readiness. The strategies focus on handling major library security obstacles to maintain resource protection.

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