

TECHNOLOGY- MEDIATED SECURITY PRACTICES FOR CONTROL OF THEFT AND MUTILATION OF LIBRARY RESOURCES IN POLYTECHNICS IN ABIA STATE

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Abstract

This study assessed Technology mediated security practices for control of theft and mutilation of library resources in Polytechnics in Abia state. The study adopted a descriptive survey research design. All the 21 staff (Professionals, Para-professionals and support staff) that works in the three polytechnic libraries in Abia state (Abia state Polytechnic library, Temple Gate polytechnic, Covenant Polytechnic) was used for the study. Hence census sampling was used since there was no sampling. The instrument for data collection was a 16-item researcher-developed questionnaire using Mean and standard deviation to answer the research questions raised for the study. The findings showed among others that the ways by which library resources are being stolen and mutilated include: removing the jacket cover of the resources, hiding them inside the exercise books. It was also found that the only emerging technologies used for security purposes in Polytechnic libraries in Abia state is library identification cards while others such as Radio frequency identification (RFID), Bio metric system, among others are not used for security purposes in Polytechnic libraries in Abia state. Based on the findings, it was recommended that Polytechnic administrations should map out adequate funds to procure and install relevant technologies that should be used in securing library resources against theft and mutilations.

Introduction

Polytechnic Libraries collect resources in various sizes and formats, in their effort to provide a broad array of resources to meet the needs of their users. These

library resources can include printed works, audio and video recordings, microforms, visual and electronic resources and generations of requisite equipment for accessing or listening to data stored on them. As noted by Adomi (2008) cited in Omosekejimi, Ijiekhuamhen and Ojeme (2015) Library resources are the information bearing materials which enable the library to fulfill its goal of meeting the information needs of its users. In academic libraries, it promotes teaching and learning.

As suggested by Swagota (2022) protecting the library documents, staff, users, reading rooms and workflow are the most important areas of the library security system. Though libraries have been providing some level of security measures, for example, making available security staff at the entrance of a library to ensure that all library materials taken out of the library are checked and users that accesses the library must be registered under their parent institution. This activity has reduced theft in the sense that the users are checked when they want to leave the library premises but has not fully managed theft and mutilation of library resources in polytechnic libraries. Security is an essential problem in polytechnic libraries. Security weaknesses in libraries, coupled with attacks or other kinds of failures can lead to confidential documents being inappropriately accessed, or loss of integrity of the data stored, in case of electronic records and transactions.

Theft and mutilation of library resources are deviant act by users in the library and have served as one of the major obstacles against discharging effective library services. Hence, the security of library resources (book and non-book material) is of utmost importance to the librarians and information specialist to reduce or avoid

unauthorized access to information-bearing materials available in the library (Omosekejimi, Ijiekhuamhen & Ojeme, 2015). Omoike and Alabi (2020) define mutilation as the act of destroying or removal of an essential part of library materials as to render it useless. This could be as a result of bending of corner of paper or inserting pencil or pen into pages, also opening of books back to back, and tearing of relevant pages. Whereas, Theft is the unauthorized taking of library materials with the intent to permanently deprive others from using it or have access to the materials. Fasae and Adedokun (2016) opined that theft of library material is when information material of any form is taken out of the library in an unauthorized manner by the library users.

Technology driven era has made polytechnics libraries to consistently strive to boost their security through the development and implementation of emerging digital technologies (CCTV, RFID, IP etc.) that are suitable for securing library's information resources. These Emerging technologies play a significant role in assisting polytechnic libraries for control of theft and mutilation, secure library resource and ensure that libraries fulfill their academic purpose (Owate & Iroeze, 2023). The availability of these technologies has given polytechnic libraries salient opportunities to leverage on their utilization to seemingly develop new approaches and processes of securing library resources so as to reduce theft and mutilation of these resources.

To get this done, the onus rest on librarians and other library staffs who work in academic environment to figure out and understand such profound technologies that could enhance the services rendered in the libraries, with a view to achieving the priorities of library users. With this, the need to be abreast with needed technological

skills becomes necessary (Bhargava & Gupta, 2021). This study on technology-mediated security practices for control of theft and mutilation of library resources of polytechnics will concentrate more on the technological gadget used to mitigate security issues. How the library staffs (who are valuable factor ensuring that the library resources are giving extra care in terms of security) use these technologies to curb theft and mutilation.

Statement of the Problem

The main aim of polytechnic libraries is to provide information resources to users and fulfill their information needs. Among every firm and organization, no other system provides knowledge at cost of nothing like the library. Library Services are only achieved through availability of library collections. Despite all the efforts put in place by the librarians to meet users' information needs, librarians face some challenges in the provision of the information services in the library as they notice missing materials and damages done to some library materials by deviant users in the library (Omoike & Alabi, 2020). These actions are theft and mutilation of information resources.

There seem to be failure of the existing traditional methods of securing information resources and with the increasing volume of books in the library. This has resulted to financial loss, material deterioration and decreased quality of library resources. Modern technologies seem to have found importance in improving quality security of library collections and controlling theft and mutilation which have been identified as the most common crimes in polytechnic libraries.

Perhaps, there is increased rate of theft and mutilation of information resources in these polytechnic libraries. Librarians and library staff do not have the necessary skills and knowledge to effectively utilize these technologies in securing the information resources in the library. These are some of the issues that constitute the concern which the researcher intends to investigate in this study, with the view of finding and making suggestions for improvement. Based on this premise, the study investigates technology-mediated security practice for control of theft and mutilation of library resources in polytechnics in Abia state.

Research questions

The study is guided by the following research questions:

- 1) What are the ways by which library resources are being stolen and mutilated?
- 2) What are the emerging technologies used for security purposes in polytechnic libraries in Abia state?

Literature Review

Technology has been viewed as a lodestone for improving library's security practices and for increasing the flexibility of library services. Technology has transformed the way libraries operate and protect their information resources. With the growing reliance of technology, there have been security and privacy concerns along with it. In the security aspect of the library, technology has been seen as an efficient tool that enhances the securing of library resources. Ford, Wood and Cena (2023) defined

technology as various devices such as laptops, phones and tablets. They also suggested that technology may make one think of internet, data, or advancement. While Mittal (2017) suggested that new technologies like radio frequency identification (RFID) have been merged into the library activities and this have totally changed the way the library carry out its security.

In promoting the development of modernization, the application of technology also enhances the modernization level of preservation and security of library resources. To buttress this study further, Security of library resources is the protection of library resources from unauthorized access, use, disclosure, disruption, modification, or destruction to provide confidentiality, integrity, and availability. Security of information resources and services are integral library operations that can make libraries remain perpetually useful. The essence of securing library resources is to preserve them for posterity and damage. Many ways have been developed for securing library collection electronically. These ensure that no material leaves the library without being checked out.

The crimes, which are committed by some users of the libraries, have deprived many other users from fully achieving their information needs. Vandalism, mutilation, defacement, theft, arson, etc. are problems regularly experienced by the materials of these libraries. Books and other information materials are valuable and expensive but are likely targets for criminal activities. According to Ekere and Akor (2019) theft and malicious damage against books are difficult to combat because the risk of getting caught is very low. 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 polytechnic library to another.

Theft and mutilation of library materials are illegal incidences in libraries. The term 'theft' refers to crimes involving taking of a person's property without their permission and consent. Theft of library resources can be defined as the unauthorized taking of library materials with the intent to permanently deprive others from using it or having access to the materials. Fasae and Adedokun (2016) opined that theft of library material is when information material of any form is taken out of the library in an unauthorized manner by the library users. The major reasons or causes of theft in the library are as a result of high cost of book, insufficient copies in the library, beauty appearance of book, lack of user orientation, high demand of books, lack of photocopying Machine and so on. This is in support of Urhiewhu, Emojobo and Omah (2018) who stated that in the aspect of security issues, theft and mutilation, vandalism, delinquent borrowers and purposeful displacing of materials, are some of the main security issues.

Swagota (2022) ascertained that theft is the most common problem almost faced by every library. Whether theft of library materials like textbooks, cassettes, other items of user's and staff's personal belongings and computer equipment. Theft of books or other resources in libraries is a common problem that requires a serious attention from library professionals in particular and other stakeholders generally. It is unfair to mutilate library materials thereby denying others the opportunity of using such

materials. Many academic and special libraries have adopted RFID system for its special feature of security of library materials, inventorying functions and high speed circulation. The smart card in RFID system works as identification card. As suggested by Ogedoihu and Adinchezor (2022) electronic security systems like RFID, are adoptable with the application of ICT. The libraries also get the most benefit from adopting such measures in controlling unauthorized access. RFID systems track and identify resources with high accuracy and significantly contribute to preventing theft or loss of library resources. RFID technology's real-time tracking enables library to monitor the movement of books and avoid loss. It can quickly identify if an information resource is missing or has been stolen.

Abubakar, Abdullahi, Dewa, Barkindo and Zubairu (2020) cited Nancy (2016) on the use of electronic security to combat book theft and the experiences involved in their installation. Nancy further stressed that the adoption of video surveillance and closed-circuit television (CCTV) systems serve as a way to monitor vandalism in the library. The system can also be used to monitor and record evidence on clientele and employee misconduct. This will help in curbing theft and mutilation in libraries.

Theft and mutilation of library materials are deviant act by users in the library and have served as one of the major obstacles against discharging effective library services especially in academic libraries. This major challenge has been faced by libraries over time and libraries are making serious efforts to subdue it. Fasae and Adedokun (2016) stated in their study that the mostly stolen information materials are textbooks, projects/theses/dissertations and newspapers. It was suggested that abuser

should be subjected to heavy and well-defined penalties, while closed circuit television should be installed in libraries to minimize these occurrences, as well as providing effective photocopying facilities which can be easily used when needed by library users.

Methodology

This study adopted a descriptive survey design. The population of the study comprised 21 staff working in three polytechnic libraries (Abia State Polytechnic, Temple Gate Polytechnic and Covenant Polytechnic) Aba, Abia state. The population was small and manageable; therefore, the researcher adopted a census enumeration technique. The instrument used for data collection in this study is a structured questionnaire titled "Technology Mediated Security Practices for control of Theft and Mutilation of Library Resources in Polytechnics" (TMSPTMLRP). It has four clusters. Section A is demographic variables of the respondents, and other sections have clusters in line with the research questions. The instrument for data collection was designed using a four point rating scale of strongly agreed (SA), agreed (A), disagreed (D) and strongly disagreed (SD).

A total number of twenty one (21) copies of the questionnaire were distributed to the sample respondents in the three selected tertiary institutions under study. All questionnaires were returned. The study adopted the use of tables, and mean(\bar{x}) scores, (using 2.50 as criteria) as method of data analysis.

Results and Discussion

The results of the descriptive and inferential analyses were presented as follows:

Research Questions 1

What are the ways by which library resources are being stolen and mutilated?

Table 4.1: Mean Ratings on the ways by which library resources are being stolen and mutilated in Polytechnic libraries in Abia state

| S/N | Ways by which library resources are being stolen and mutilated include: | X | SD | Remark |
|-----|---|-------------|-------------|---------------|
| 1 | Removing the jacket cover of the resources | 3.44 | 0.85 | Agreed |
| 2. | Hiding them inside the exercise books | 3.14 | 0.88 | Agreed |
| 3. | Hiding them in their pocket | 2.81 | 0.89 | Agreed |
| 4. | Putting them in their hand bag | 3.47 | 0.93 | Agreed |
| 5. | Confusing and diverting the attention of people at the circulation desk | 2.87 | 0.78 | Agreed |
| 6. | Confiding with library staff to help smuggle them out from the library | 2.79 | 0.81 | Agreed |
| 7. | Hiding them under the cloth | 3.45 | 0.90 | Agreed |
| 8. | Tearing of pages (s) off. | 3.67 | 0.94 | Agreed |
| | Cluster mean | 3.21 | 0.87 | Agreed |

Data in Table 4.1 show the mean values of respondents on the various ways by which library resources are being stolen and mutilated in polytechnic libraries in Abia state. The results showed that the mean responses in all the items (1-8) ranged between 2.79-3.67 which are all above the mean bench mark of 2.50. This indicated that they agreed in all the items as the ways by which library resources are being stolen and mutilated. The results specifically indicated that the ways by which library resources are being stolen and mutilated include: removing the jacket cover of the resources, hiding them inside the exercise books, hiding them in their pocket, putting them in their hand bag, confusing and diverting the attention of people at the circulation desk and tearing of page (s) off among others. The standard deviation of all the items (1-8) ranged between 0.78-0.94 which shows that the mean responses of the respondents are close to the mean and to each other.

This implies that the library resources are being stolen and mutilated in polytechnics. The results agreed with Bessey, Abalaka, Dauda and Okikiri (2014) who identified ways through which library resources are mutilated to include: underlining of sentences, writing words on the margin, joining and ripping pages from books. The results equally aligned with the earlier studies by Okpara, Nsirim and Iroka (2023) who conducted separate studies on preservation and security of information sources in libraries which revealed among others that there was a problem of theft and mutilation in public libraries which take different dimensions but mostly due to stealing and tearing of library materials, hidings books from their designated shelves and positions.

Research Question 2

What are the emerging technologies used for security purposes in Polytechnic libraries in Abia state?

Table 4.2: Mean Ratings on the Emerging technologies used for security purposes in Polytechnic libraries in Abia state

| S/N | Emerging technologies used for security purposes in Polytechnic libraries | X | SD | Remark |
|-----|---|------|------|-----------|
| 1. | Radio frequency identification (RFID) is used for security | 2.37 | 0.78 | Disagreed |
| 2. | Closed Circuit Television (CCTV) are installed for security purposes | 2.44 | 0.73 | Disagreed |
| 3. | There is undeniable access to Computer network | 2.39 | 0.61 | Disagreed |
| 4. | Bio metric system is installed | 2.18 | 0.84 | Disagreed |
| 5. | Defensive artificial intelligence is present | 2.08 | 0.62 | Disagreed |
| 6. | Internet of Things (IOT) is used for security | 2.25 | 0.56 | Disagreed |
| 7. | Cloud security is in place | 2.03 | 0.67 | Disagreed |
| 8. | Fingerprint ridges are used for entry | 2.13 | 0.72 | Disagreed |

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|-----|---|-------------|-------------|------------------|
| 9. | Authentication of Voice Recognition | 2.19 | 0.61 | Disagreed |
| 10. | IRIS Recognition is used for entering the library | 1.67 | 0.46 | Disagreed |
| 11. | Application of quick response code | 1.99 | 0.77 | Disagreed |
| 12. | Internet protocol cameras has been installed | 2.05 | 0.60 | Disagreed |
| 13. | Library identification cards used for access | 2.65 | 0.97 | Agreed |
| | Cluster mean | 2.19 | 0.69 | Disagreed |

The results in Table 4.2 show the mean respondents on the emerging technologies used for security purposes in Polytechnic libraries in Abia state. The results indicated that the mean values of all the items except item 21 ranged between 1.67-2.44 and are below the mean bench mark of 2.50 indicating their disagreement on those items as the emerging technologies used for security purposes in Polytechnic libraries in Abia state. This specifically showed that the respondents disagreed on the use of emerging technologies such as Radio frequency identification (RFID), Bio metric system, Defensive artificial intelligence, Cloud security, Authentication of Voice Recognition and IRIS Recognition among others for security purposes in Polytechnic libraries in Abia state. The result of item was 2.65 which was above the mean bench of 2.50 indicating their agreement that Library identification cards is used for access and for security purposes in Polytechnic libraries in Abia state. The standard deviation of all the items (9-21) ranged between 0.46-0.84 which shows that the mean responses of the respondents are close to the mean and to each other.

This is an indication that majority of the emerging technologies are not used for security purposes in Polytechnic libraries in Abia state. The results corroborated with Bhatt and Shastri (2018) who stated that safety of library resources was the primary concern of library professions using many electronic security systems and technological

devices. The results also agreed Pattnaik and Pattnaik (2007) who outlined different technologies that could be used for security purposes in libraries to include electronic security systems such as RFID, electromagnetic security and smart cards.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were made:

1. Polytechnic administrations should map out adequate funds to procure and install relevant technologies that should be used in securing library resources against theft and mutilations as well as other damages in the libraries.
2. National Board for Technical Education (NABTEB), Ministry of education as well as Education Trust Fund and other Stakeholders should come up with emergency interventions on the procurement of technologies to all polytechnic libraries in order to curb incessant cases of theft and mutilation of library resources in polytechnics.
3. They should install electronic security systems like CCTV, video recording surveillance, RFID, and other electronic devices in various places and provide access to live video feeds at the library services desks to allow library staff to monitor the library space for unwanted activity or theft and mutilation.
4. By installing an electronic security system, they have to ensure the availability of power supply to maintain better safety and security in the library.
5. Library management should implement a strong policy in the library such that users who are caught in the act of theft and mutilation of library resources will be expelled from the polytechnic.

Conclusion

This study assessed Technology mediated security practices for control of theft and mutilation of library resources in Polytechnics in Abia state. Based on the analysis carried out and the results of the study it could be concluded that library resources are being stolen and mutilated through tearing of the pages off, putting them in their hand bags, hiding them under the cloth, removing the jacket cover of the resources, hiding them inside the exercise books, and confusing and diverting the attention of people at the circulation desk. The only means of security used for security purposes in Polytechnic libraries in Abia state was library identification cards while technologies such as Radio frequency identification (RFID), Bio metric system, Defensive artificial intelligence, Cloud security, Authentication of Voice Recognition and IRIS Recognition among others were not used for security purposes in Polytechnic libraries in Abia state.

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