

ASSESSING THE MENACE OF VANDALISM OF LIBRARY RESOURCES: EVOLVING TECHNOLOGICAL SOLUTIONS

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ABSTRACT

Vandalism of library materials is a long-standing issue of concern globally with repercussions for library development. This study focused on assessing the menace of vandalism of library information resources and evolving technologies as countermeasures to the devastating problems of loss of relevant information and finance. A convenient sampling strategy was used. The study's population comprised 25 library employees from Mountain Top University and Babcock University libraries. The study revealed that vandalism of information resources is a global phenomenon, however prevalent in developing countries. It was evident that textbooks, journals and magazines were more prone to mutilation and vandalism. The finding shows that Closed-Circuit Television (CCTV), Burglar System and Radiofrequency Identification System (RFID) were majorly used to prevent vandalism of library materials. Lack of funding, mismanagement of technological gadgets, lack of trained staff and awareness of users are major challenges that could affect the smooth implementation process. Measures put in place should be guided by policies that could sustain its existence. Library staff as well as library users should be exposed to the pros and cons of the technology. The upgrade of libraries to a tech-driven research and information disseminating centre has integrated the library system from the invisible to a more open and conscious environment.

Keywords: Vandalism, Library, Information Resource, Technological Solutions

INTRODUCTION

The term vandalism is generally used to describe the deliberate destruction or damage of either public or private

property. Vandalism is often time associated with the loss of property and in extreme cases the loss of life. The most typical targets for vandalism, according to Scott, La Vigne, and Palmer (2007), are public spaces and privately

owned facilities that are accessible to the general public. The library is accessible to the public; thus, it is not immune to vandalism. One of the security issues that libraries throughout the world deal with is vandalism, which involves the deliberate mutilation, defacement, theft, and destruction of library information resources. Attesting further to this submission, Akidi and Imeremba (2020), opines that vandalism of library property is a planned activity that may be motivated by sentiments of rage, hate, or other delinquent emotions.

Vandalism of library materials has been an issue of concern as far back as 400AD - 500AD, with the event of barbarians attacking the city of Rome, vandalising properties not sparing the medieval libraries and its collections, including manuscripts, classic literature, clay tablets, and rolls (Olanlokun & Salisu, 1985). The destruction of the library collection at that time put the library collection in jeopardy and on the verge of extinction. Hence, the vandalism of library materials is not a recent phenomenon nor a problem unique to Nigeria but rather an occurrence that happened to library resources irrespective of size or type of libraries (Enidiok, Bassey, & Olalekan, 2019).

The significance of information resources cannot be overemphasized since users rely on them for knowledge and information that promote academic achievement. The primary goal of an academic library is to support the institution's goals in the areas of learning, teaching, and research. Hence the provision of robust information resources to meet the needs of library users is a core mandate of the library. In this light, library information resources are purposefully acquired bearing in mind the needs of the user community. Typically, an academic library would have a collection of both paper-based and electronic information resources such as textbooks, journals, magazines, newspapers,

newsletters, indexes, abstracts, pamphlets, databases, computers, videotapes, cassettes, microform, sound film, and CD-ROM.

Any academic library that desires to satisfy its user community must be concerned about theft and vandalism of library materials and possible ways of minimizing or eradicating them. It is in view of this that the study seeks to assess the menace of vandalism of library information resources and proffer sustainable solutions using evolving technologies.

Library Resources and Vandalism: The Issues

Over the years, libraries have had to deal with vandalism, a security issue which encompasses the destruction of library furniture, equipment and facilities as well as the mutilation and theft of library information resources, all of which have detrimental effects on the library and its users from an economic, psychological, and educational stance. The issue of vandalism, particularly in these hard times when most universities are dealing with dwindling budgets and high cost of information resources as a result of the poor economic situation, is a call for concern.

Vandalism of library resources has its attendant challenges such as loss of crucial knowledge and information, depriving potential users of access to necessary information resources and inability of library to deliver effective services and satisfy users need. This menace not only impedes the effective use of library resources, but it also further affects research standard because researchers are unable to access crucial and relevant information resources that may have been vandalised or stolen from the library.

Unfortunately, these library materials are vulnerable to theft and vandalism, especially in libraries with inadequate security measures. The deformation of a book's spine, tearing of

relevant book pages, cutting out images from books or other library materials, hiding library books on purpose, unauthorized removal of library materials, and in extreme cases, burning down the library building are instances of vandalism that result to the loss of a library's information resources. Furthermore, cyber-vandalism as identified by Akidi and Imeremba (2020) entails altering the library's website, the creation of malware that corrupts electronic files, and removal or damage to computer components that result in computer malfunction are instances of vandalism on library electronic materials. Unarguably, a considerable loss of information resources in libraries around the world is due to vandalism. Inadequate security measures, expensive photocopying services, inadequate information resources due to poor library budgets, and high demand for books with limited copies are factors that contribute to the vandalism of library materials, identified in the literature (Adekunle, Adekunjo & Unuabor, 2018; Omoike & Alabi, 2020).

One of the main barriers to the provision of effective library services is the vandalism of library resources (Omoike & Alabi, 2020). In line with this submission, the implication of vandalism of library resources can be grave for both the library and its users. While the library is overburdened with the financial cost of replacing resources, they also deal with reduced library collection and the inability to satisfy the users and deliver library service optimally. On the other hand, library users may be affected by feelings of frustration and disappointment when they are deprived of getting the required information resources in the library. If vandalism is not curbed, the library will have a severe shortage of information resources, and irreplaceable damages which subsequently will affect library service delivery and the satisfaction of library users.

These library information resources that become objects of theft and vandalism are purposefully acquired to serve library users. It therefore becomes imperative that libraries' managements implement sufficient security measures to deter vandalism. In spite of the library's effort through library user orientation programs and well laid rules and regulations against vandalism, the issue of vandalism still persists. It is on this premise that this study sought to access the menace of vandalism of library resources and proffer evolving technological interventions to eliminate the menace.

Technological solutions that could prevent vandalism of library resources

Technological solutions are critical to the daily procedures and processes in the library. The routines of these technologies are not limited to primary library functions, but also aid in the protection of library resources against vandalism. Therefore, technological devices that could prevent vandalism are further discussed below. Among them are the following:

- Closed-circuit television (CCTV)
- Electromagnetic Security System
- Burglar System
- Radiofrequency Identification System (RFID)
- Biometric system X-ray Security machine and
- Robot Security System (RSS).

Closed Circuit Television

Closed circuit television is a type of surveillance and investigation tool that uses audio and video cameras to deliver data to a specific location. The device makes a significant contribution to the advancement of security surveillance techniques for the purpose of saving lives and preventing property vandalism. The major closed circuit television components are a camera, monitor, hard drive, digital video recorder (DVR), VGA converter cable, and adapter. The camera can capture objects both visually and on video. The Digital Video

Recorder (DVR) is a device that converts analog data to digital data and stores closed circuit television recordings. The closed circuit television and DVR are linked together via cable. An adapter is a device that adjusts voltage to match the operating voltage of the connected equipment. Hard disks are useful for storing recordings in the form of files. A video graphic array is used to translate or transfer digital signals from a computer to a monitor so that visuals can be seen (VGA). The functionality of the components mentioned above is still a standard function used in closed circuit television, particularly when using a coaxial cable connection.

Closed circuit television is increasingly being used in businesses and higher education institutions for purposes such as classroom lectures, and library surveillance (Agustina and Galdon, 2011). The installation of closed-circuit television improves the quality of supervision and monitoring of library patrons. CCTV can be used by libraries to monitor work areas, identify patrons and staff, prevent theft, and maintain the safety of the building and its other amenities. The detective system can be employed to keep track of and document evidence of customer and employee wrongdoing. According to Kumbhar and Veer (2016), the gadget can assist protect

people from criminal activities at libraries. It can also be used for data storage, verification, investigation, and prevention. When the need arises, this will ensure the certainty and accuracy of records. It is critical to monitor user behavior and attitudes and to emphasize the risks of bringing food or other prohibited items into the library. Because closed circuit television will salvage any inappropriate behavior displayed by users.

Blissett, Stennett, and Day conducted research on "New approaches for digital closed circuit television processing in autonomous traffic monitoring" (1993). The findings revealed a strong relationship between classroom activities and closed-circuit television. According to the study, using closed circuit television surveillance helps reduce disruptive behaviour among students. In other words, installing closed circuit television should be considered to maintain law and order in any higher education setting, particularly in the library. Ani and Bassey (2008) believed that the usage of ICTs in libraries would make it easier for CCTV installed in the library to spot some user misbehaviour, such as the mutilation of some pages of materials. CCTV can be used to keep track of security, prevent crime, and maintain safety.



Fig. 1: closed circuit television

Electromagnetic Security System

The electromagnetic security system, a technological method used in many libraries, uses security strips on the spine of the book with an integrated security label. The system was designed and built to work in tandem with the library administration system in order to protect the library's collection.

Electromagnetic security system has three components. They are:

1. Tattle Tapes
 2. Sensitizer/Desensitizer
 3. Detection Point
1. Tattle Tapes: These tiny magnetic stripes can be inserted inside books, magazines, newspapers, and other materials.

2. Sensitizer/Desensitizer: This is hardware that prepares library materials for check-in and check-out by sensitizing and desensitizing them.

3. Detection Point: The detection system is typically located at the library's entrance. This gate triggers an alarm whenever any sensitive library resource passes through it.

Although electromagnetic security systems prevent book theft, book vandalism remains a risk because users have the ability to damage book pages. It is also possible for a user to damage library materials that have tattle tape on them in rare cases. The strips, however, may always be distributed randomly rather than on a predetermined number of pages.



Fig. 2: Tattle Tapes

Burglar alarm systems

Burglar alarm systems are used to detect unauthorized entry into a building. The system, which consists of sensors, control panels, alerting systems, and linkages, was designed to sound an alarm in the event of an unauthorized movement in the library. To detect unauthorized access to the library, the sensors employ monitoring doors, infrared motion detectors, ultrasound, vibration, and magnetic fields.

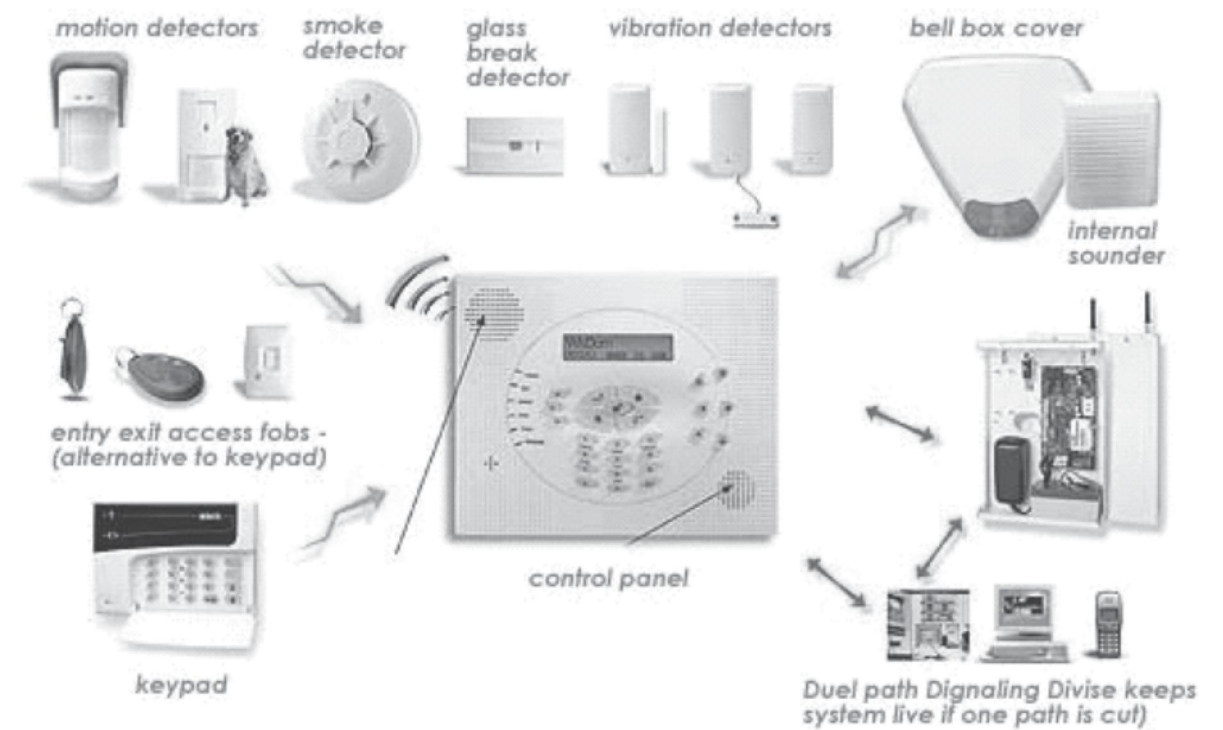


Fig. 3: Burglar alarm systems

Radio Frequency Identification (RFID)

A radio frequency identification (RFID) reader is an electronic device that consists of a small chip and an antenna. It is a system that primarily employs a three-part technology comprised of a reader, a transmitter with a decoder, and a transponder to enable object tracking (Radio Frequency-Tag). During World War I, Britain developed the first radio frequency identification (RFI) system to distinguish between friendly and hostile aircraft. It has advantages over other AIDC technologies like cameras, magnetic cards, and identity cards in that it can read and write, is easily miniaturized, has a variety of shape options, is resistant to the environment, is reusable, can penetrate data, can store a lot of data, and has system and data security (Yosef & Saman, 2016). Radio frequency identification is a popular library communication system that connects physical assets to the Internet via a radio frequency identification network (Smart, 2004). Radio frequency (RF) is a data transmission signal used by radio frequency identification senders and receivers (RF).

Radio frequency identification is a wireless communication system that sends data from a radio frequency identification transmitter to a radio frequency identification receiver using an RF signal. In a radio frequency identification system for libraries, the sender is the radio frequency identification reader, and the receiver is the radio frequency identification tag. Tags are frequently attached to objects in a radio frequency identification system, and a reader connected to the same system should be able to "detect" the data stored there. These tags are affixed to the item to be recognized and transmit data from the RFID system to the receiver, which is a frequency module. The two parts of RFID are tags/transponders and readers (Edward & Orukpe, 2014).

Different organizations use different radio frequency identification standards. Because there are so many standards available, users of the technology can choose the one that best meets their needs and use it to communicate between an interrogator (a radio frequency identification reader) and a radio frequency identification tag. It was first introduced to the library in the late 1990s. Radio frequency identification technology was designed to automate all aspects of library workflow, including book lending and returns. Tracking information resources, managing shelves, and circulation are some additional ways that RFID is used in standard library operations (Evans & Moore, 2013). Here's a simplified diagram of a typical radio frequency identification setup.

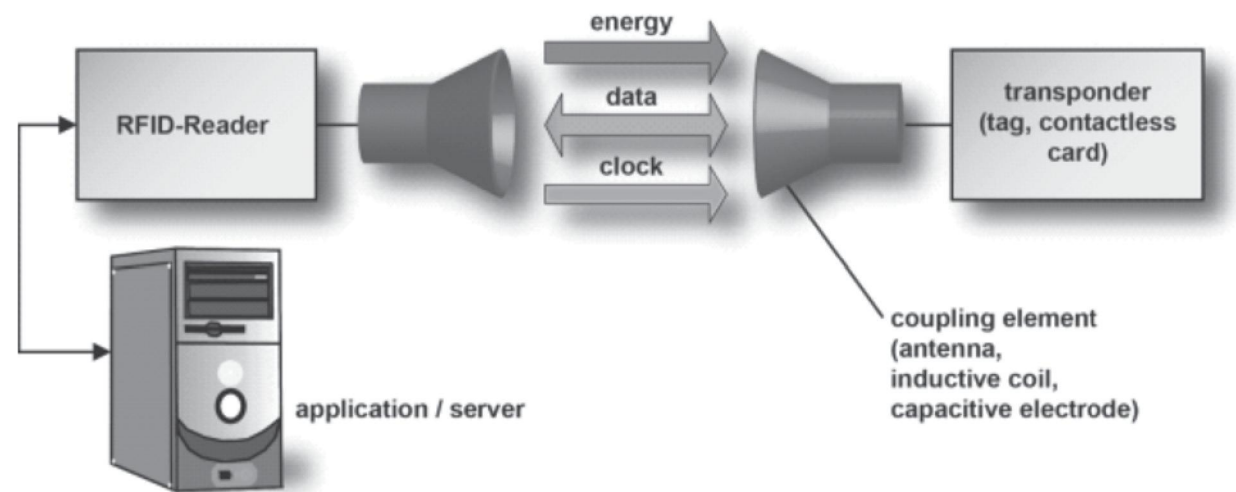


Fig. 4: radio frequency identification

Biometric system

Biometric technology is the science of assessing physiological or behavioral traits that serve to confirm a person's identity. The term "biometric identification" refers to a system that uses scanned graphic data from various sources for personal identification purposes, such as face imaging, retinal and iris scans, fingerprint scans, voice patterns, facial recognition, hand geometry identification, and so on. Biometric technology has virtually limitless applications. It's fascinating to learn that biometrics technology isn't all that new and that its applications have existed for much longer than most people realize. They have been a part of commercially sold items since 1968. The installation of a hand-scanning system to control access to the University of Georgia's dining halls in 1973 is the oldest continuously used general application of biometrics. Photoelectric cells were used in the apparatus to scan the members' fingers and measure their finger lengths. Biometric applications are only now catching up with the technology, which has been around for nearly 30 years. According to biometric providers, the main area of development for biometrics in the near future is time and attendance. Outside of time and attendance, the most widespread application of biometrics is in computer and electronic commerce security.

In the 1990s, fingerprint identification systems were the most widely used and popular type of biometric technology. The library, on the other hand, has made extensive use of biometric tools such as hand scanners, voice recognition systems, hand geometry systems, eye scanning systems, and face recognition systems. The technology detects library users by their fingerprints at the point of entry and has the unusual property of accurately recording patron entry and exit times.



Fig. 5: Biometric system

X-ray Security machine

X-ray security machines are used to prevent visitors from entering the library with guns and other dangerous materials. The X-ray machines are usually operated by the security officer in charge of the library. Using a magnetic field, users can pass through an arch to determine whether they have any metals in their bodies (Security Devices, 2007). X-ray devices, on the other hand, can detect various types of dangerous commodities such as blades, gas, drugs, and more. They are highly effective and dependable for security detection and identification of potentially dangerous commodities.



Fig. 6: X-ray Security machine

Robot Security System

Robotics is an important technology in today's world. Robots are making their way into homes, hospitals, and higher education institutions, particularly libraries. Robotics began to advance in the twenty-first century. The term "robot" was first used by Czechoslovakian playwright Karel Capek in his play "Rossum's universal robots" in 1920. Since it was made known to the general public, the original name for a robot, robota, has been used frequently. Slavery is referred to as robota in Czech. In his 1942 short story "Runaround," science fiction author Isaac Asimov coined the term "robotics." The study of machines is known as robotics. The three robotics laws were introduced in "Runaround."

It outlines the three fundamental principles that robots must follow in order to function safely. The following are the laws:

- a) Under any circumstances, a robot may not harm or injure a human.
- b) A robot must always obey any human-given instructions, as long as they do not contradict or contradict the first law.
- c) A robot must defend its own existence as long as it does not violate the first and second laws.

The move toward robotics in the library entails increased participation in providing services to users and carrying out tasks such as head counts, re-shelving and shelf reading, retrieving books from reading tables, and so on.



Fig. 7: Robot Security System

Theoretical Framework

The Theory of Deterrence

The early works of classical philosophers such as Thomas Hobbes (1588-1678), Cesare Beccaria (1738-1794), and Jeremy Bentham can be traced back to the Deterrence Theory (1748-1832).

Deterrence theory, which has its roots in classical criminology, describes the effect of punishing criminals on the general population in terms of discouraging them from committing crimes (Beccaria, 1764). This theory proposes using penalties or threats of sanctions to not only punish current criminal behavior but also to deter future criminal behavior. The purpose of general deterrence is to keep the general public from committing crimes. As a result, a country's treatment of offenders serves as a model for those in the general public who have not yet participated in criminal activities.

The three main elements of deterrence theory are certainty, celerity, and severity. People are discouraged from committing crimes when they believe the legal consequences will be certain, swift, and severe, according to Williams and Hawkins (1986). In general, the harsher the penalty, the more likely it is that people will stop committing crimes.

Deterrence theory is useful in the criminal justice system because it supports the importance of crime detection and potential consequences. The purpose of punishment in the context of the library is to deter repeat offenders from committing a crime and to discourage others from committing the crime. This implies, however, that tightening the library's policy on penalties for stealing and mutilation is likely to reduce library vandalism, because those who intend to steal or vandalize library information resources through a variety of techniques are likely to fear the consequences of being caught. Deterrence theory seeks to prevent library users from engaging in criminal activity such as theft and vandalism.

METHODOLOGY

In order to examine the threat of library resource vandalism and the evolving technological solutions in two chosen private university libraries in Ogun State, Nigeria, this study used a survey design with a case study approach. The study's population comprised of 25 library employees from Mountain Top University and Babcock University libraries. A convenient sampling strategy was used. Frequency and percentage analysis were used to examine the data.

Data Analysis and Discussion

1. What are the factors responsible for the security problems in your library

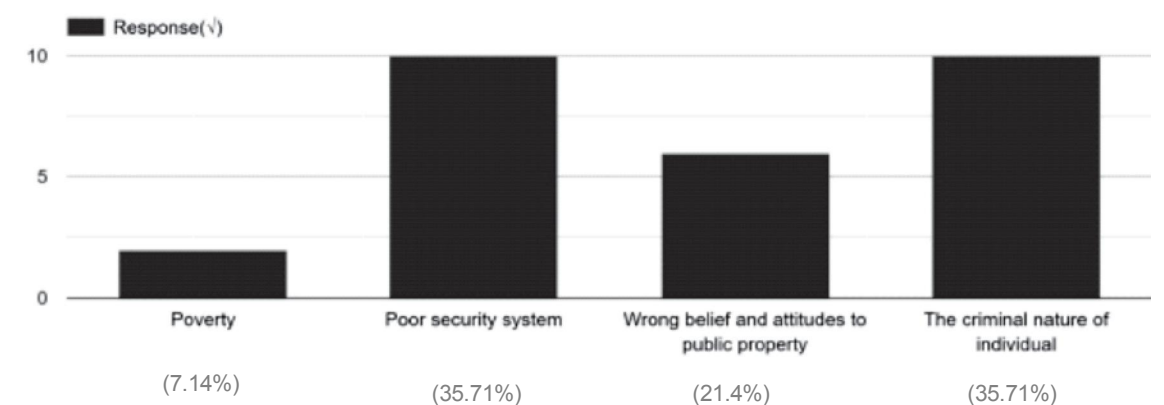


Fig. 8: Factors responsible for these security problems

It was determined that a lack of adequate security measures (35.71%) and criminal behavior of individuals (35.71%) were to blame for the security issues at Mountain Top University and Babcock University Library. Wrong belief and attitudes to public property (21.4%) and poverty (7.14%). The two libraries are impacted by users who are inclined to commit crimes, according to research. Additionally, the two libraries are significantly impacted by a weak security system.

2. Are security measures put in place your library
21 responses

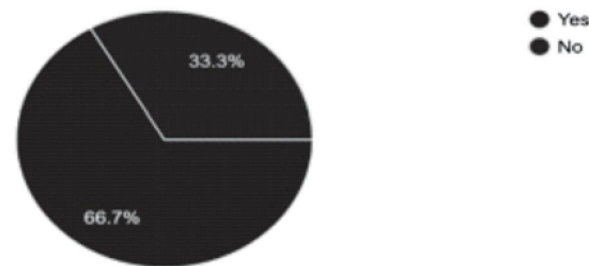


Fig. 9: Security measures in library

According to this study, the majority of respondents 66.7% believe that security measures have been implemented in their libraries. 33.3% of those surveyed said they had no security measures in place. The findings indicate that security precautions have been taken at Mountain Top University and Babcock University Library to a reasonable extent.

Instruction: please tick (✓) as many appropriate options that best describes your agreement with the question 3. What are the Security systems available in your library

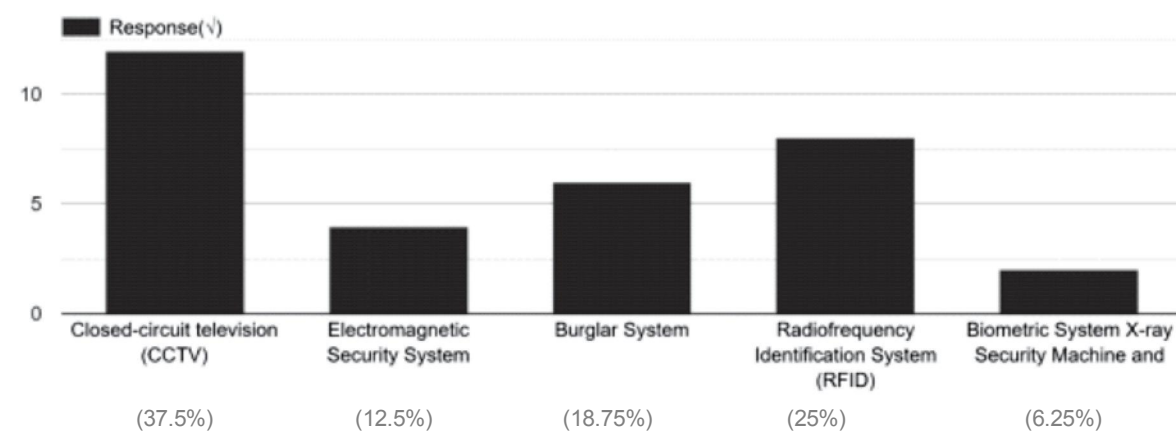


Fig. 10: Security systems available in the library

Closed-circuit television (CCTV) (37.5%) deployment is the top choice among library staff at both Mountain Top University and Babcock University, followed by radio frequency identification (RFID) (25%) and burglar alarm systems (18.75%). According to the respondents, it is difficult to find electromagnetic security systems (12.5%) and biometric security machines with X-ray capabilities (6.25%). According to the study, CCTV is much more readily available in the two libraries.

Instruction: please tick (✓) as many appropriate options that best describes your agreement with the question 4. What are the categories of material that are prone to stealing in your library

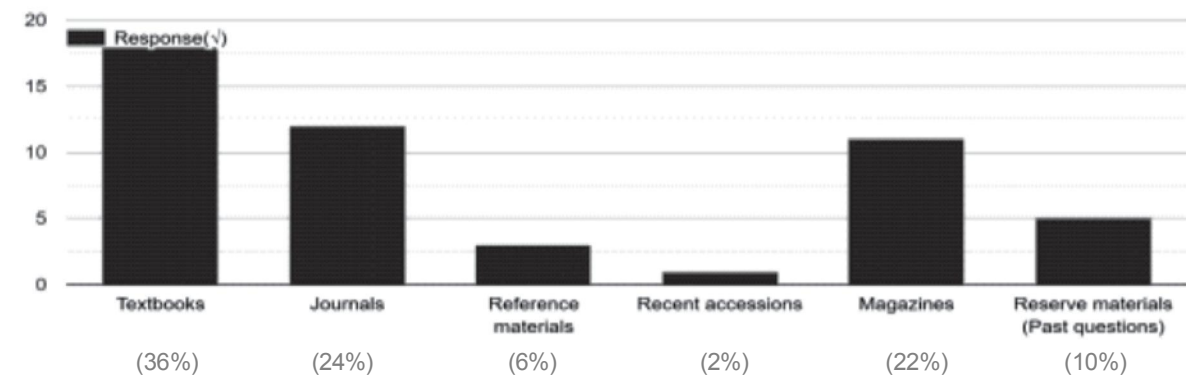


Fig. 11: Categories of material that are prone to stealing in your library

According to the respondents, a high percentage of materials that are stolen from libraries are textbooks (36%). Following this are Journals (24%), Magazines (22%), Reserve materials (past questions) (10%), Reference materials (6%) and recent additions (2%). This shows that theft of books, journals, and magazines is most common among library patrons at Mountain Top University and Babcock University libraries.

5. Are you satisfied with the security arrangement in the library?
20 responses

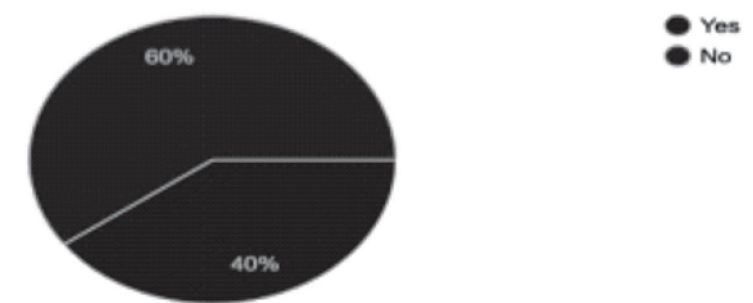


Fig.12: Security arrangement in the library

Regarding the satisfaction with the security measures in the library, 40% of respondents said they are dissatisfied with the current state of the security arrangement in their library, while 60% of respondents are satisfied with it. This demonstrates how well-planned Mountain Top University's and Babcock University Library's security architecture is.

Instruction: please tick (✓) as many appropriate options that best describes your agreement with the question 6. What are the reasons users vandalized library resources

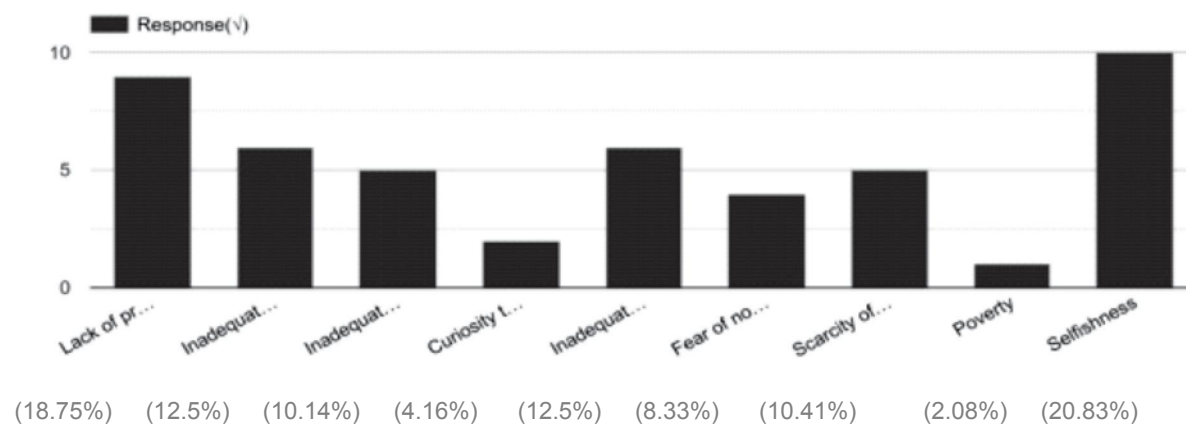


Fig. 13: Reasons for committing library crimes

According to the respondents, selfishness (20.83%) is a key factor behind library resource vandalism. Other contributing factors include inadequate staff (12.5%), poor photocopying services (12.5%), and inadequate supervision (18.75%). Overall, the libraries do not have enough staff or facility to stop vandalism.

7. What are the challenges of using technological devices to prevent library vandalism?

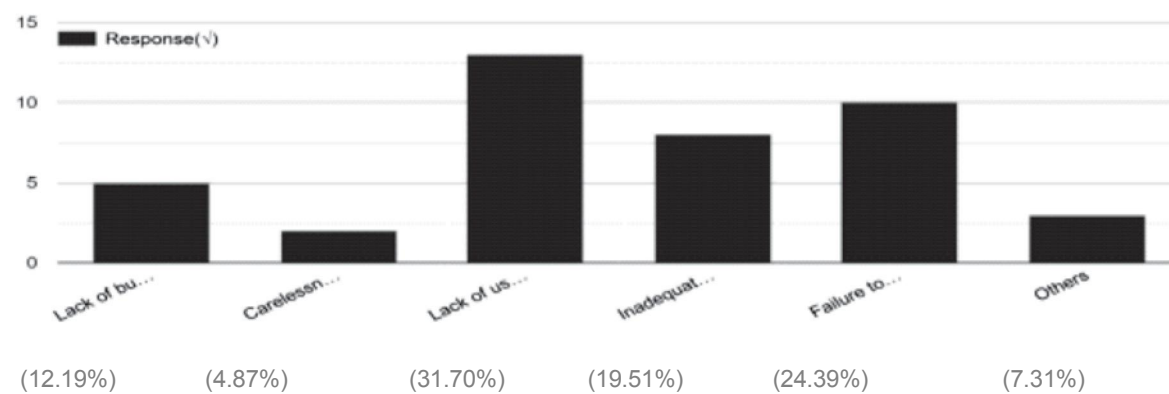


Fig. 14: Challenges using technological devices to prevent library vandalism

The difficulties that respondents face when using technological tools to stop library vandalism are Lack of user awareness (31.70%), failure to adapt to the recent technological wave (24.39%), insufficient staff capacity building (19.51%), and a lack of budget implementation (12.19%) are also significant factors. The management should give top priority to training and re-training library staff from Mountain Top University and Babcock University.

Discussion of findings

The result of the study affirmed that lack of adequate security measures and criminal behavior of individuals were to blame for the security issues at Mountain Top University and Babcock University Library. This finding is in agreement with the study of Adekunle, Adekunjo & Unuabor, 2018; Omoike & Alabi, (2020). Inadequate security measures, expensive photocopying services, inadequate information resources due to poor library budgets, and high demand for books with limited copies are factors that contribute to the vandalism of library materials, identified in the literature.

Findings also show that Closed-circuit television (CCTV) deployment is the top choice among library staff at both Mountain Top University and Babcock University, followed by radio frequency identification (RFID) and burglar alarm systems. This is in line with the study of Kumbhar and Veer (2016), that gadget can protect people from criminal activities at libraries. It can also be used for data storage, verification, investigation, and prevention and Evans & Moore (2013) tracking information resources, managing shelves, and circulation are some additional ways that RFID is used in standard library operations.

The study revealed a high percentage of materials that are stolen from libraries are textbooks. Following this are Journals, Magazines and reserve materials (past questions). This study is similar to the work of Olanlokun & Salisu (1985) vandalism of library materials has been an issue of concern as far back as 400AD - 500AD, with the event of barbarians attacking the city of Rome, vandalising properties not sparing the medieval libraries and its collections, including manuscripts, classic literature, clay tablets, and rolls.

The result of the finding shows that selfishness is a key factor and challenge behind library resource vandalism. This study is similar to the work of Akidi and Imeremba (2020) vandalism of library property is a planned activity that may be motivated by sentiments of rage, hate, or other delinquent emotions. However. The deployment of technological gadgets such as CCTV in Mountain top university and Babcock University libraries has brought positive outcomes in preventing vandalism.

Conclusion and Recommendations

The transformation of libraries into technology-driven centers for research and information dissemination has transformed the library system from an opaque to a more open and conscious environment. However, hearing about library resource vandalism today is inappropriate. Measures that should be put in place should guide policies that could support the continued use of technology used to prevent the theft of library resources. The technology's advantages and disadvantages

should be discussed with both library staff and patrons. Government and higher education institutions, particularly library administrators, should embrace and promote available technology to improve library services and secure ground resources.

REFERENCES

- Adekunle, F.A., Adekunjo, O.A., & Unuabor, S.O. (2018). Theft and vandalism: Effect and control mechanism on information resources in academic libraries in Osun State, Nigeria. *IOSR Journal of Humanities and Social Science*, 23(7), 71-78.
- Agustina, J. R., and Galdon, G. (2011). "The impact of CCTV on fundamental rights and crime prevention strategies: The case of the Catalan Control Commission of Video surveillance Devices," *Computer Law & Security Review*, 27(168-174).
- Akidi, J. O. & Imeremba, U. D. (2020). Use of ICT for securing library and its resources against vandalism in the era of global insecurity. *Management of library and information centers in the era of global insecurity* (pp24-41). Ilorin: TIM-SAL & BIM Pub Ltd.
- Ani, O. E., & Basse, B. E. (2008). Availability and utilization of information and communication technology in Nigerian law libraries for sustainable development. *Heartland Journal of Library and Information Science (H-JOLIS)*, 2(1/2), 141-151.
- Beccaria, C. (1986 [1764]). *An essay on crimes and punishments*. Indianapolis: Hackett Publishing Company, Inc.
- Blissett, R. J., Stennett, C., and Day, R. M. (1993). "New techniques for digital CCTV processing in automatic traffic monitoring," in Vehicle Navigation and Information Systems Conference, Edwards, E. O., & Orukpe, P. E. (2014). Development of a RFID based library management system and user access control. *Nigerian Journal of Technology*, 33(4), 574-584.
- Evans, C., & Moore, A. (2013). Using RFID technology at University of Sussex. *SCONUL Focus*, 59, 13-15.
- Enidiok, M. S., Basse, A.B., Olalekan, O. M. (2019). Vandalism and security problems in academic library: A case study of Lagos state polytechnic library, Lagos, Nigeria. *Indian Journal of Library Science and Information Technology*, 4(1):31-36.
- Kumar, P., Ranganath, S., Weimin, H., and Sengupta, K. (2005). "A Framework for Real Time Behavior Interpretation from Traffic Video," *Intelligent Transportation Systems*, vol.6.
- Kumbhar, K. N., & Veer, D. K. (2016). Study of security system used in college libraries. *International Journal of Research in Library Science*, 2(1), 1-8.
- Olanlokun, S. O. & Salisu, T. M. (1985). *Understanding the library: A handbook on library use*. Lagos: Concept publications limited.
- Omoike, A. & Alabi, R. (2020). Theft, mutilation and abuse of library and information materials by undergraduates of university of Ibadan, Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 11(2), 1-12, DOI: dx.doi.org/10.4314/ijikm.v11i2.1.
- Lang, J., and L. Han, L. (2014). "Design of library smart bookshelf based on RFID," *Applied Mechanics and Materials*, 519(1366-1372).
- Scott, M. L., La Vigne, G. N. & Palmer, T. (2007). *Preventing vandalism*. Washington, DC: The Urban Institute Justice Policy Center.
- Smart, L. (2004). "Making Sense of RFID," *Netconnect*, 4-14.
- Williams, K. R., & Hawkins, R. (1986). Perceptual research on general deterrence: A critical review. *Law & Society Review*, 20(4), 545-572. <https://doi.org/10.2307/3053466>
- Yosef, M. K., & Saman, M. Y. (2016). The adoption and implementation of RFID: A literature survey. *Libres*, 26(1), 31-52.