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Assessment of ICT Tools For Book Security in Academic Libraries in Taraba State, Nigeria

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ABSTRACT

This study examined the use of Information and Communication Technology (ICT) tools for securing books in academic libraries in public tertiary institutions in Taraba State, Nigeria. Specifically, the study assessed the availability, state, and types of ICT tools used for book security. A descriptive survey research design was adopted, with a population of 182 librarians, administrative staff, and ICT personnel across selected public tertiary institutions in the state. Census sampling was used, while data were collected using a structured questionnaire titled ICT Tools and Book Security Questionnaire (ICTTBSQ). The instrument was validated by experts and yielded a Cronbach's Alpha reliability coefficient of 0.87. A total of 176 questionnaires were retrieved and analysed using frequencies, percentages, means, standard deviations, The findings revealed that ICT tools required for securing books were moderately available (grand mean = 0.35, SD = 0.45), while the available tools were generally in a relatively satisfactory state (grand mean = 2.64, SD = 1.03). Respondents also agreed on the types of ICT tools used for book security (grand mean = 2.65, SD = 1.07). Significant differences were found among the responses of librarians, administrative staff, and ICT staff regarding the state of ICT tools, $F(2,175) = 8.405$, $p < .001$, whereas no significant differences were found regarding their availability, $F(2,175) = 2.769$, $p = .06$, and types, $F(2,175) = 2.116$, $p = .124$. The study concluded that ICT tools play an important role in securing books in academic libraries in Taraba State, although their availability remains inadequate for comprehensive book security. It was recommended that library management should regularly conduct needs assessments and provide adequate funding to address gaps in ICT security facilities and ensure equitable access to appropriate technologies.

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ABSTRACT

This study examined the use of Information and Communication Technology (ICT) tools for securing books in academic libraries in public tertiary institutions in Taraba State, Nigeria. Specifically, the study assessed the availability, state, and types of ICT tools used for book security. A descriptive survey research design was adopted, with a population of 182 librarians, administrative staff, and ICT personnel across selected public tertiary institutions in the state. Census sampling was used, while data were collected using a structured questionnaire titled ICT Tools and Book Security Questionnaire (ICTTBSQ). The instrument was validated by

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experts and yielded a Cronbach's Alpha reliability coefficient of 0.87. A total of 176 questionnaires were retrieved and analysed using frequencies, percentages, means, standard deviations, The findings revealed that ICT tools required for securing books were moderately available (grand mean = 0.35, SD = 0.45), while the available tools were generally in a relatively satisfactory state (grand mean = 2.64, SD = 1.03). Respondents also agreed on the types of ICT tools used for book security (grand mean = 2.65, SD = 1.07). Significant differences were found among the responses of librarians, administrative staff, and ICT staff regarding the state of ICT tools, $F(2,175) = 8.405$, $p < .001$, whereas no significant differences were found regarding their availability, $F(2,175) = 2.769$, $p = .06$, and types, $F(2,175) = 2.116$, $p = .124$. The study concluded that ICT tools play an important role in securing books in academic libraries in Taraba State, although their availability remains inadequate for comprehensive book security. It was recommended that library management should regularly conduct needs assessments and provide adequate funding to address gaps in ICT security facilities and ensure equitable access to appropriate technologies.

KEYWORDS: ICT Tools, Book Security, Academic Libraries, Library Security and Public Tertiary Institutions

INTRODUCTION

Academic libraries play a vital role in supporting teaching, learning, research, and knowledge development in tertiary institutions. They provide students, lecturers, and researchers with access to books, journals, research materials, and other information resources. However, the effectiveness of academic libraries depends largely on their ability to protect and preserve these resources. Book theft, mutilation, vandalism, misplacement, unauthorized removal, and non-return of borrowed materials remain persistent challenges that can reduce the availability and usefulness of library collections. Madu and Adeniran (2023) emphasize that book security is essential for maintaining the integrity and accessibility of library resources required for teaching, learning, and research.

The increasing development of Information and Communication Technology (ICT) has provided academic libraries with opportunities to strengthen the security and management of their collections. ICT refers to digital devices, systems, software, and applications used to collect, process, store, retrieve, and communicate information. In academic libraries, ICT applications facilitate the organization of collections, circulation management, inventory control, remote access to information, and protection of physical resources. Common ICT-based security tools include computers and servers, Integrated Library Management Systems (ILMS), barcodes, Radio Frequency Identification (RFID), Closed-Circuit Television (CCTV), electronic security gates, biometric systems, and smart-card access systems. These technologies improve library efficiency while supporting the security and preservation of library materials (Ekere et al., 2017; Agyen-Gyasi et al., 2020).

Among the available ICT tools, RFID has emerged as an important technology for improving book security. RFID tags attached to library materials can be detected by sensors at exit points, thereby helping to prevent unauthorized removal. The technology also facilitates automated circulation, self-checkout, rapid inventory verification, and real-time monitoring of library resources. Turcu et al. (2015) observe that RFID improves operational efficiency and security by enabling automated tracking and control of library materials. Similarly, CCTV surveillance can monitor user activities, deter theft and vandalism, and provide evidence when materials are lost. When RFID and CCTV are integrated with ILMS platforms, libraries can monitor borrowing patterns, generate alerts for overdue or unreturned materials, and maintain detailed records of resource usage.

Effective book security, however, requires more than the deployment of ICT tools. It involves a multi-layered approach combining technology, administrative policies, physical infrastructure, staff capacity, and user education. Academic libraries can complement ICT-based systems with controlled entrances, monitored shelving, regular inventory audits, clearly defined lending policies, and appropriate sanctions for violations. Issa et al. (2022) highlight the importance of strengthened internal security governance and risk-mitigation practices in academic libraries, while Ogunniyi et al. (2023) emphasize the role of staff and user education in promoting responsible use of library resources. Furthermore, the deployment of surveillance and tracking technologies should take privacy considerations into account, particularly regarding the collection and protection of users' information.

In Taraba State, academic libraries in institutions such as Taraba State University, Federal University Wukari, Kwararafa University, Federal Polytechnic Bali, Taraba State Polytechnic, and other tertiary institutions provide essential resources for large student and academic communities. Nevertheless, available evidence indicates that library materials remain vulnerable to theft, mutilation, vandalism, mis-shelving, unauthorized removal, and other forms of misuse. Existing practices in many libraries rely substantially on manual supervision by library staff and security personnel, open-access arrangements, and basic preservation measures. Although ICT-based technologies such as RFID, CCTV, electronic gates, and computerized security systems offer considerable potential, their adoption in many Nigerian academic libraries remains constrained by inadequate funding, unreliable electricity supply, poor ICT infrastructure, limited staff training, and weak policy enforcement.

The continued vulnerability of library materials has important implications for the quality of library services and the achievement

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of institutional educational objectives. Lost, stolen, or damaged books reduce the availability of information resources, increase the cost of replacing collections, and may frustrate students and researchers whose information needs remain unmet. Consequently, there is a need to examine how ICT tools can be effectively deployed to strengthen book security in academic libraries in Taraba State. This study therefore focused on the role of ICT tools in securing library books, with particular attention to technologies such as RFID, CCTV, Integrated Library Management Systems, and electronic access-control mechanisms, as well as the challenges affecting their effective utilization in academic libraries in the State.

Statement of the Problem

Academic libraries in Taraba State are essential to teaching, learning, and research because they provide students, lecturers, and researchers with access to important educational and scholarly resources. However, these libraries continue to experience book theft, mutilation, unauthorized borrowing, hiding of materials, non-return of borrowed books, and loss of library resources. These challenges reduce the availability and usefulness of essential academic materials and may increase the cost of replacing damaged or missing resources. Although Information and Communication Technology (ICT) tools such as Library Management Systems (LMS), barcodes, Radio Frequency Identification (RFID), and Closed-Circuit Television (CCTV) have been introduced or recommended as mechanisms for improving book security, insecurity of library materials remains a persistent concern (Omah, 2024; Ekere et al., 2017). The continued occurrence of these problems suggests that the mere availability of ICT tools does not necessarily translate into effective protection of library collections.

The problem is further compounded by inadequate ICT infrastructure, unstable electricity supply, poor internet connectivity, insufficient funding, weak implementation and maintenance of security systems, and inadequate training of library personnel. Consequently, some academic libraries continue to rely heavily on manual supervision, which may be insufficient for addressing contemporary security challenges. Where ICT-based security technologies are available, their utilization may be limited, inconsistent, or ineffective, thereby creating a gap between the availability of ICT tools and their actual application for book security. This situation threatens the accessibility of academic resources, potentially affects the quality of teaching, learning, and research, and may undermine the credibility and effectiveness of academic institutions in Taraba State. It is therefore necessary to investigate the extent to which ICT tools are utilized for securing books in academic libraries in Taraba State, assess their effectiveness, and identify the factors hindering their successful implementation. Specifically, the study sought to determine the:

- Availability of ICT tools used in Securing Books in Academic Libraries in Taraba State, Nigeria;
- Types of ICT tools used in Securing Books in Academic Libraries in Taraba State, Nigeria;
- State of ICT tools used in Securing Books in Academic Libraries in Taraba State, Nigeria.

Research Questions

The following research questions were raised to guide the study:

- How available are ICT used tools for securing books in academic libraries in Taraba State, Nigeria?
- What is the state of ICT tools used for securing of books in academic libraries in Taraba State, Nigeria?
- What types of ICT tools are used for securing books in academic libraries in Taraba State?

LITERATURE REVIEW

Availability of ICT tools on Securing books

Ademola and Rukayat (2025) found that ICT tools such as computers, library software, online journals, and wireless internet were available in academic libraries in Kwara State, although the study focused primarily on general library service delivery rather than book security. Similarly, Nyemezu (2022) reported the availability of electronic security systems, including CCTV, library-oriented software, mobile phones, and fire alarm systems, in university libraries in Rivers State, but found that their utilization was generally low due to inadequate funding, management attention, electricity supply, and technical skills. Sobalaje et al. (2023) also identified the availability of various ICT facilities in university libraries in Oyo State, particularly for marketing library services, while noting inadequate funding and poor infrastructure as major constraints. Collectively, these studies establish that ICT tools are increasingly available in Nigerian academic libraries but that their effective application is often constrained by institutional and infrastructural challenges.

Studies conducted within Taraba State further demonstrate the relevance of ICT to academic environments. Odaudu and Oyeniyi (2025), for instance, found that ICT availability and ease of use positively influenced ICT application at Taraba State University, while ICT-related challenges negatively affected its use. The study, however, focused on online learning rather than the security of physical library collections. Across the reviewed studies, there are common methodological features, including quantitative survey

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approaches, questionnaire-based data collection, and the use of statistical software for analysis. However, most of the studies concentrated on availability and utilization of ICT or its application to general library services, online learning, or marketing, rather than specifically examining ICT-based book security. The evidence also consistently identifies inadequate funding, poor infrastructure, unreliable electricity, limited technical skills, and weak institutional support as major barriers to effective ICT implementation.

Types of ICT tools used on Securing Books

Osayande (2024) examined the effectiveness of electronic security systems in selected university libraries in South-West Nigeria, focusing on the types of systems available, methods of illegal removal of library materials, and the effectiveness of security devices. Using a survey design, questionnaire, and participant observation, the study found that academic libraries faced significant security challenges and that the installation of electronic security devices could substantially improve the protection of library resources. Akanbi et al. (2018), on the other hand, investigated the application of barcode technology at Landmark University's Centre for Learning Resources and found that barcode systems enhanced accuracy, speed, efficiency, and time-saving in library operations, while also supporting the identification and prevention of loss of library materials. Similarly, Adeniran et al. (2020) investigated ICT application in selected academic libraries in Kwara State and found relatively high availability of facilities such as computers, internet connectivity, CCTV cameras, electronic databases, library automation software, and barcode readers, although computerized security doors were largely unavailable. Collectively, these studies demonstrate the contribution of ICT and electronic technologies to library operations, resource identification, surveillance, and security. They also reveal that technologies such as CCTV, barcode systems, library automation software, and other electronic security devices can improve efficiency and help reduce the loss or unauthorized removal of library materials. However, the studies differ in their specific focus and scope.

State of ICT tools on Securing Books

Audu and Bappah (2022) examined the access and use of electronic information resources among students of higher institutions in Taraba State and found that resources such as e-books, e-journals, online databases, and CD-ROMs were available, although access was constrained by poor internet connectivity, inadequate computer terminals, and insufficient ICT skills. Similarly, Bakum and Tomilola (2022) investigated ICT skills and research productivity among librarians in public university libraries in North-East Nigeria and found that ICT skills significantly influenced librarians' research productivity, while Madukoma et al. (2023) reported a positive and significant influence of ICT skills on the research output of academic librarians in South-West Nigeria. These studies demonstrate the importance of ICT availability, skills, and infrastructure in improving academic library services and professional performance. They also share methodological similarities with the present study through their quantitative survey approaches, questionnaire-based data collection, and use of SPSS for data analysis.

Despite these contributions, the reviewed studies differ substantially from the present study in terms of focus and purpose. Audu and Bappah (2022) concentrated on students' access to and use of electronic information resources, while Bakum and Tomilola (2022) and Madukoma et al. (2023) focused on ICT skills and librarians' research productivity. None of these studies specifically examined ICT as a mechanism for protecting physical library collections against theft, mutilation, unauthorized removal, loss, and other forms of book insecurity. Moreover, although Audu and Bappah (2022) provided useful evidence from Taraba State, their study focused on students rather than library personnel and did not examine security-related technologies such as RFID, CCTV, barcoding, and library management systems.

METHODOLOGY

The study adopted a descriptive survey research design to examine the use of Information and Communication Technology (ICT) tools for securing books in academic libraries in public tertiary institutions in Taraba State, Nigeria. The study covered selected institutions, including Taraba State University, Federal University Wukari, College of Education, Zing, College of Agriculture, Jalingo, and Federal Polytechnic, Bali, with a population of 182 librarians, ICT personnel, and administrative officers involved in library operations and ICT-based book security.

A census sampling technique was employed to cover the entire population, while data were collected using a structured 42-item questionnaire titled ICT Tools and Book Security Questionnaire (ICTTBSQ), measured mainly on a four-point Likert scale. The instrument was validated by three experts in Library and Information Science and Measurement and Evaluation, while a pilot test involving 30 respondents at Federal College of Education, Yola, produced a Cronbach's Alpha reliability coefficient of 0.87. Permission was obtained from the participating institutions, and 176 questionnaires were administered and retrieved, representing a 96.7% response rate. Data were analysed using descriptive statistics, including frequencies, percentages, means and standard deviations, while One-Way Analysis of Variance (ANOVA) was used to test the hypotheses at a 0.05 significance level, with post

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hoc tests conducted where necessary.

RESULTS

The results are presented in the order of research questions 1 - 3 and the null hypotheses from table 1 to table 6. For the research questions, the keys represent: n = no of respondents and SD = Standard Deviation.

Research Question 1: How available are ICT used tools for securing books in academic libraries in Taraba State, Nigeria?

Table 1: Mean and Standard Deviation of the Availability of ICT tools for Securing Books in Academic Libraries in Taraba State, Nigeria

S/N	ITEMS	X	S.D.	Decision
1.	Barcode systems for tracking and securing books	0.11	0.32	Low
2.	RFID (Radio Frequency Identification) technology for monitoring and theft control	0.30	0.46	Moderate
3.	CCTV cameras for surveillance in all critical library areas	0.54	0.50	Moderate
4.	Integrated Library Management System (LMS) used for book security	0.47	0.50	Moderate
5.	Electronic security gates or book detection systems at exit points	0.20	0.40	Low
6.	ICT workstations for book tracking and inventory control	0.31	0.46	Moderate
7.	Stable internet infrastructure supporting security tools	0.53	0.50	Moderate
Grand Mean	0.35	0.45	Moderate	

Table 1 above show the responses of the respondents at the academic libraries in Taraba State to research question 1. The table further reveals that items 2, 3, 4, 6 and 7 were moderately available while items 1 and 5 were lowly available. The overall grand mean of 0.35 and standard deviation of 0.45; means that the respondents indicated that most of the ICT tools needed for securing books in academic libraries were moderately available in Taraba State.

Research Question 2: What is the state of ICT tools used for securing of books in academic libraries in Taraba State, Nigeria?

Table 2: Mean and Standard Deviation of the State of ICT tools used for Securing Books in Academic Libraries in Taraba State, Nigeria

S/N	ITEMS	X	S.D.	Decision
8.	Most ICT tools used for book security in this library are functional and in good working condition.	2.93	0.98	Agreed
9.	The CCTV system installed is up-to-date and effective.	2.82	1.05	Agreed
10.	The Integrated Library Management System (LMS) is regularly updated and performs efficiently.	2.73	0.95	Agreed
11.	The RFID/barcode scanners used in this library are reliable and not frequently faulty.	2.09	1.16	Disagreed
12.	The internet supports the smooth operation of ICT security tools.	2.87	1.01	Agreed
13.	Electronic security gates function effectively to prevent unauthorized removal of books.	2.16	1.09	Disagreed
14.	There is regular maintenance and technical support for all ICT tools used in securing books.	2.90	0.99	Agreed
Grand Mean	2.64	1.03	Agreed	

Table 2 above show the responses of the respondents at the academic libraries in Taraba State to research question 2. The table further reveals that most of the respondents agreed to items 8, 9, 10, 12 and 14 while items 11 and 13 were disagreed to. The overall grand mean of 2.64 and standard deviation of 1.03 means that the respondents unanimously agreed to the state of ICT tools used for securing of books in academic libraries in Taraba State, Nigeria.

Research Question 3: What types of ICT tools are used for securing books in academic libraries in Taraba State?

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Table 3: Mean and Standard Deviation of the Types of ICT tools used for Securing Books in Academic Libraries in Taraba State, Nigeria

S/N	ITEMS	X	S.D.	Decision
15.	This library uses barcode technology to manage and secure books.	2.06	1.11	Disagreed
16.	Radio Frequency Identification (RFID) tools are used in this library for book security.	3.04	0.88	Agreed
17.	Closed-Circuit Television (CCTV) cameras are used to monitor and protect library resources.	3.15	0.93	Agreed
18.	The library utilizes an Integrated Library Management System (LMS) for inventory and security.	2.99	1.01	Agreed
19.	Anti-theft electronic security gates are installed at the library's entrances and exits.	2.30	1.20	Disagreed
20.	Cloud-based security tools or software are used to track and secure electronic and print books.	2.60	1.14	Agreed
21.	Alarm systems or sensors are in place to alert staff about unauthorized book movement.	2.39	1.19	Disagreed
Grand Mean	2.65	1.07	Agreed	

Table 3 above show the responses of the respondents at the academic libraries in Taraba State to research question 3. The table further reveals that most of the respondents agreed to items 16, 17, 18 and 20 while items 15, 19 and 21 were disagreed to. The overall grand mean of 2.65 and standard deviation of 1.07 means that the respondents unanimously agreed to the types of ICT tools used for securing of books in academic libraries in Taraba State, Nigeria.

DISCUSSION OF FINDING

The study found in Table 1 that ICT tools required for securing books in academic libraries in Taraba State were moderately available, as indicated by the overall grand mean of 0.35 and standard deviation of 0.45, suggests that although academic libraries have adopted some technology-based security measures, the availability of such tools remains inadequate for comprehensive book security. This finding is consistent with Nyemezu et al. (2022), who reported variations in the availability and utilization of electronic security systems among university libraries in Rivers State, indicating that not all libraries had adequate access to modern security technologies. Similarly, Ademola (2025) found that ICT facilities and tools were available in academic libraries in Kwara State, but their availability and utilization differed across libraries and service areas, supporting the present finding of only moderate availability. The finding also receives indirect support from Sobalaje et al. (2023), whose study on ICT tools for marketing library services in selected university libraries in Oyo State established that libraries were adopting ICT tools to improve service delivery, although the extent of adoption varied among institutions. However, the present finding appears to disagree with Odaudu and Oyeniyi (2025), whose study at Taraba State University, Jalingo, emphasized the increasing integration of ICT in university operations and online learning, suggesting a relatively stronger technological environment within the institution.

The result further shows that there was no statistically significant difference in the responses of librarians, administrative staff and ICT staff regarding the availability of ICT tools for securing books, $F(2, 175) = 2.769$, $p = .06$. Although the calculated F value indicates some variation in the responses of the three groups, the p-value of .06 is slightly above the .05 significance level; hence, the observed difference is not statistically significant. This finding may suggest that the three categories of staff have generally similar perceptions of the availability of ICT security tools, possibly because they operate within the same institutional technological environment and have access to similar library facilities. Overall, the finding is supported by the literature showing increasing but uneven adoption of ICT in Nigerian academic libraries, while studies emphasizing broader institutional ICT integration suggest that some universities may have moved beyond the moderate level reported in the present study.

The study also found in Table 2 that the state of ICT tools used for securing books in academic libraries in Taraba State, Nigeria, were in a relatively satisfactory state, as indicated by the overall grand mean of 2.64 and standard deviation of 1.03, suggests that respondents generally agreed that the available ICT-based security tools were functional and useful for protecting library collections, although the variation reflected by the standard deviation indicates differences in the condition or effectiveness of the tools across libraries. This finding is supported by Osayande (2024), who examined the effectiveness of electronic security systems in selected academic libraries in South-West Nigeria and established the importance of electronic security technologies in safeguarding library resources and improving the security of collections. The finding is also consistent with Adeniran et al.

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(2020), who investigated the application of ICT in selected libraries in Kwara State and found that ICT had become an important component of modern library operations, contributing to more efficient management and delivery of library services. However, the relatively high standard deviation of 1.03 may indicate that the condition of ICT security tools is not uniform across all academic libraries, which could partly explain differences in staff perceptions.

Furthermore, the significant difference in the responses of librarians, administrative staff and ICT staff, $F(2, 175) = 8.405$, $p < .001$, indicates that the three categories of respondents did not perceive the state of ICT tools in the same way. This difference may arise from their varying levels of exposure to, responsibility for, and technical knowledge of ICT security systems. ICT staff, for instance, may assess the tools based on technical functionality and maintenance, while librarians may focus more on their practical usefulness in protecting collections, and administrative staff may evaluate them from the perspective of institutional resources and operational adequacy. Thus, the significant difference underscores the need for academic libraries to regularly assess the condition, functionality and maintenance of ICT security tools while obtaining inputs from different categories of staff. Overall, the finding agrees with previous studies that recognize the growing importance and effectiveness of ICT and electronic security technologies in academic libraries, but it also highlights that the state and perceived effectiveness of such tools may vary significantly among staff groups and institutions.

The study also found in Table 3 that respondents agreed on the types of ICT tools used for securing books in academic libraries in Taraba State, Nigeria, as indicated by the grand mean of 2.65 and standard deviation of 1.07, suggests that a range of ICT-based tools are available and recognized for supporting the protection and management of library collections. This finding is consistent with Audu and Bappah (2022), who examined access to and use of electronic information resources in higher institutions in Taraba State and established the growing presence and relevance of ICT-based resources within tertiary institutions, although challenges of access and utilization remain. The finding is also supported by Bakum and Tomilola (2022), who reported that ICT skills influence the research productivity of librarians in public university libraries in North-East Nigeria, emphasizing the increasing importance of ICT competencies and tools in contemporary library operations.

However, while these studies generally support the presence and relevance of ICT in academic libraries, they do not specifically focus on ICT tools for book security, suggesting that the present study extends the existing literature by applying ICT adoption specifically to the protection and security of library collections. The finding that there was no significant difference in the mean responses of librarians, administrative staff and ICT staff, $F(2, 175) = 2.116$, $p = .124$, indicates that the three categories of staff had relatively similar perceptions regarding the types of ICT tools used for securing books. Since the p-value of .124 is greater than the .05 level of significance, the null hypothesis is retained. This similarity in perception may be attributed to the fact that the different categories of staff operate within the same institutional environment and are exposed to substantially the same ICT security facilities. The finding therefore suggests a shared understanding among the staff regarding the types of ICT tools employed for book security. Overall, the result agrees with the broader literature on the growing integration of ICT into academic library operations, while contributing a more specific perspective by demonstrating that different categories of library personnel in Taraba State hold similar views about the ICT tools employed to secure library books.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it is concluded that Information and Communication Technology (ICT) tools play an important role in securing books in academic libraries in Taraba State, Nigeria. The findings indicate that ICT tools required for book security are moderately available and that respondents generally agreed on their types, state, implementation, effectiveness, and strategic use. The study further established that librarians, administrative staff, and ICT staff had similar perceptions regarding the availability, types, implementation, and effectiveness of ICT tools, as no significant differences were found in these areas. Based on the findings of the study, the following recommendations were made;

- The Heads of Academic Libraries are encouraged to regularly conduct needs assessments to identify gaps in available security technologies, while adequate funding should be provided to ensure equitable access to appropriate ICT security facilities.
- The library management should establish a routine maintenance schedule and replace obsolete or malfunctioning equipment promptly. This will help to ensure that ICT security tools remain functional and capable of protecting library materials effectively.
- The ICT team should ensure that a range of available, such as barcode systems, electronic security systems, RFID, CCTV, and access-control technologies should be selected based on institutional needs, cost-effectiveness, compatibility, and sustainability.

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STATEMENTS & DECLARATIONS

Conflict of Interest:

The authors declare that they have no competing financial or non-financial interests.

Data Availability:

All experimental scripts, model architectures, and benchmark configurations are openly available as cited in the paper.

Ethical Approval & Consent:

Not applicable. No human participants or vertebrate animals were involved in this computational study.

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