IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Assessing User Perceptions Towards Electronic Security System In The University Libraries Of Jammu Division: A Study

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Abstract:

The modern library is a vibrant hub of community activity, offering a diverse range of resources, services and programs that cater to the evolving needs of its users. As libraries continue to transform into dynamic, inclusive and technologically advanced spaces, they face a complex array of security challenges that threaten the safety and well-being of their staff, patrons and collection.This study assesses the electronic security practices in the libraries of the Universities of Jammu Division. With growing dependence on digital content, academic libraries face increased risks related to unauthorized access, data breaches, and system vulnerabilities. The research evaluates existing security measures, user's awareness, and institutional policies through surveys and interviews. The finding of the study reveals that library user is much aware about the library security related issues and also helps in improving library security lacunas under study. Librarians can guide the users thereby improving the security measures through training in fast changing technological world so that they can overcome the problem faced by the

library user. The study concludes with recommendations to enhance electronic security through improved infrastructure, staff and user development, and stricter policy enforcement.

Keywords /Index Terms: Library Security, CCTV Cameras/Surveillance, RFID System, Electronic Security Sensor Detectors, Barcode technology, Fire Alarms

1. INTRODUCTION

Library users play a pivotal role in the overall security environment. Libraries are the most effective means of storing and communicating ever-growing knowledge. Traditionally, the libraries were well-known as storehouses of books and other reading materials, but today libraries are fast-changing institutions. This is because of the influence of the internet and dynamic web on libraries, their collection and the users.In the digital age, university libraries have evolved from being mere repositories of books to becoming dynamic centers for information access, research, and academic collaboration. With this transformation, however, come increased risks related to library security. These risks include theft or loss of physical and digital resources, unauthorized access, vandalism, and even cyber threats. Ensuring the safety of library assets—both tangible and intangible—is now a critical concern for library administrators.As libraries are becoming more and more active, they are continuously facing the challenges of effective management in terms of the security of the existing print and non-print collection and well-being of the staff & users. The librarians need to have an appropriate machinery set in motion to secure the library resources. Akor (2013) stated that the goal of a library security system should be to ensure the safety and security of library staff, resources, equipment, and patrons. Library Security can be defined as the security of library resources. The primary purpose of the security system in the libraries should be to provide adequate safety and security measures for library employees, library users, library resources, and equipment.Library users play a pivotal role in the overall security environment. Their awareness and behavior significantly influence the effectiveness of any security measures in place. Understanding the extent of user awareness can help library authorities to develop more targeted and efficient strategies for risk prevention and mitigation.This study focuses on assessing the level of awareness among users of university libraries in Jammu regarding security issues. It aims to identify common gaps in knowledge and practice, while also recognizing areas where users contribute positively to maintaining a secure library environment. The findings will offer valuable insights for library professionals seeking to enhance security policies and adapt to the demands of a rapidly changing technological landscape.

2. COMPONENTS OF ELECTRONIC SECURITY SYSTEMS IN LIBRARIES

An electronic security system in a library typically includes:

2.1Surveillance Cameras (CCTV): Cameras that monitor library premises to deter and detect potential security threats. Closed-circuit television (CCTV) systems are widely used for surveillance, deterring theft and monitoring activities within library premises (Orji & Alex-Nmecha, 2022). Various types of CCTV cameras and their functioning in protecting library possessions is must to protect library resources from theft and unauthorized access (Ramana, 2007). The use of advanced camera technologies, including night vision, enhances the ability to monitor library spaces effectively (Gupta & Margam, 2021). Libraries install CCTV primarily in response to specific crime incidents or as part of new building designs. They face challenges balancing safety with patron privacy, leading to varied policies on footage protection and expectations of privacy within library spaces (Randall & Newell, 2014). The transition from analogue to digital CCTV systems presents challenges, including complexity in understanding and managing the technology (N. Kumar, 2014). Libraries are encouraged to conduct cost-benefit analyses before implementing CCTV systems to ensure financial viability (Pai & Prabhu, 2011). Networking capabilities of modern CCTV systems can enhance surveillance effectiveness but require careful planning and execution (Westenkirchner, 2008).

2.2 Access Control Systems: Access control systems are crucial in library security, allowing for the regulation of who can enter specific areas. These systems help prevent unauthorized access, thereby protecting valuable resources and enhancing overall safety within the library environment (Orji & Alex-Nmecha, 2022). The library access control management system includes door control boxes, weight sensors for book verification, and multiple door opening methods. It ensures security by checking if students carry books normally borrowed, enhancing overall library security and access management (Xiaoguang et al., 2018). Access Control Systems like gate system, card-reading devices, a master controller, camera devices, RFID readers, alarm systems, and infrared sensors, effectively preventing unauthorized access and theft while enhancing overall security within the library (Duyi & Qiang, 2018).Smart cards and biometric systems help restrict entry to authorized users, enhancing security at access points (Anantha Prabha et al., 2021). It restricts access to sensitive areas, ensuring that only authorized personnel can enter (Orji & Alex-Nmecha, 2022). Face recognition technology can be integrated with RFID to ensure that only authorized users gain access, thus preventing unauthorized entry (Anantha Prabha et al., 2021).

2.3 RFID Technology: Radio-Frequency Identification (RFID) technology enhances library security by enabling efficient tracking of library materials. RFID tags store unique identifiers, allowing for quick identification and monitoring of items, reducing theft and loss while improving overall operational efficiency in library management (Jayasudha & Kannan A, 2024). Radio-Frequency Identification systems streamline the check-in and check-out process while preventing theft (Anantha Prabha et al., 2021). Radio-frequency identification systems enhance inventory management and theft prevention, despite some concerns regarding health risks (Jeyasekar & Aishwarya V., 2020). It enhances library security by enabling efficient tracking of items, reducing theft, and automating inventory management. It utilizes radio waves for object detection, ensuring that libraries can monitor their collections effectively while improving overall user satisfaction and service quality (Bhui, 2023).

2.4. Alarm Systems: Systems that alert library staff or security personnel in case of a security breach or suspicious activity.

2.5Intrusion Detection Systems (IDS):IDS Systems can detect unauthorized access or suspicious activity within the library.

2.6Electronic Article Surveillance (EAS) Systems: EAS Systems can prevent theft of library materials by detecting unauthorized removal of items.

3, NEED OF THE STUDY

Electronic Security Systems in Libraries is needed because of following reasons:-

- As the libraries are becoming more and more active, the librarians are forever facing the challenges of effectively managing the well-being and the security of the existing print and non-print collection. For this purpose the librarians have to have appropriate machinery set in motion to secure the library holdings.
- In order to prevent theft reduced risk of book theft and loss. and to enhance safety for library staff, its users and collections this study is considered necessary

4. OBJECTIVES OF THE STUDY

The following are the objectives of the study:

i. To assess the awareness level of library users related to library security issues.

ii. To know about availability of the tools and techniques for handling library security related issues.

iii. To identify the problems faced by the library users for library related security issues.

iv. To suggest library security measures to minimize loss of library resources.

5. RESEARCH METHODOLOGY

5.1 Sources and Method of Data Collection

The data for study had been collected both from primary and secondary sources.. In addition to this the information for the study was gathered through a review of online literature from databases, namely ProQuest, Emerald, Library Literature, Research Gate Information, and Google search engine.For the present study, questionnaire method was used as research tool to conduct the survey. The questionnaire comprised a set of multiple-choice questions which was developed to probe library users and library staff. Additionally, a semi-structured interview schedule was also developed to collect qualitative data from library staff. 1, the data collected for the purpose of this research was first coded in numeric form. Every item in the questionnaire was allocated a specific numeric code on the basis of which, the responses of various respondent were seeded in Excel worksheet. Thereafter, the available data in quantitative form was analyzed using SPSS software, whereas, the qualitative data was analyzed manually using thematic analysis.

5.2 Population and Sample

The present study had adopted the case study method to meet the research objectives. Moreover, the researcher had chosen a mix method approach, using both qualitative and quantitative tools to conduct this case study. The proposed study was undertaken to explore in detail the security issues of the libraries under study. It provides details regarding the security measures taken, problems and other aspects of library security.

6. LIMITATIONS OF THE STUDY

The study was limited to the students and faculty members of the following University libraries in Jammu division:

i. University of Jammu, Jammu
ii. Central University of Jammu, Samba
iii. Cluster University of Jammu, Jammu
iv. Sher-e-Kashmir University of Agricultural Science and Technology(SKUAST),Jammu
v. Sri Mata Vaishno Devi University (SMVDU), Kakrayal(Katra)

7. REVIEW OF RELATED LITERATURE REVIEW

Review of related research is a vital prerequisite to actual planning and for the execution of any research work before embarking on making a new study. Information about the findings of various research studies gets accumulated over a while in the form of books, encyclopedias, journals, abstracts, thesis, and other documents of records. When a new investigation is started, the investigator gets new ideas and directions from this vast mass of research findings. Various studies reported in this category focusing on electronic security systems are described as under:

Ewing (1994) concentrated on the crime and security issue as it stands in UK libraries now. He talked about typical instances of library abuse, including vandalism, theft of property, staff/user abuse, non-return of things, and book theft. He looked at ways to lessen various forms of abuse and studied current reports on crimes in libraries. He came to the conclusion that exterior damage, book mutilation, and widespread book theft are all regular occurrences. Loss has not been described correctly, and library counting procedures are subpar. He suggested that inventories be enhanced, loss must be properly calculated in order to increase the quality of statistics gathered, providing for greater proof of theft, and authorities should also adopt strict legal deterrents.

Applications of barcode technology for library work were described by Jeevan (2000) using case study on the use of barcode technology at the Indian Institute of Technology, Kharagpur, Central Library has discussed. The potential uses of barcode technology in the information workplace were also addressed in this article. Additionally, a sample list of regional suppliers of barcode solutions has been shown.

Wherever feasible, according to Ramamurthy (2001), the side design and building design should be taken into account while planning library security during the construction of the library building. Since there were no electronic security methods during the Middle Ages, curses were used to protect books. Electronic security measures, however, can now assist libraries in preventing theft of library materials and other unethical losses. Entry control, site observation, and alarm notification to the relevant authorities are frequently provided by the electronic security equipment component. Burglar defense, inventory security, access control, and video surveillance are the main components of any electronic security system.

The main problem in any library with a sizeable collection is retrospective conversion, which is covered in Manjunath & Pujar (2002) which discussed the advantages of barcode technology and recommendations for choosing the hardware/software, highlighting the features of scanners and printers. This essay is a case study based on the retroactive conversion and bar-coding exercise carried out at the IGIDR Library in Mumbai, India.

Jadhav & Kulkarni (2003) stated that The IIT Bombay Central Library includes a variety

of collections, both in physical and electronic/digital form. The unique and classic collection in the physical form has to be protected for future generations by overcoming immoral ways of losses. The digital collection may easily be kept on the system and made accessible to users on the web without being altered. By implementing the electronic security system, the project funded by MODROB/MHRD contributed to the emergence of the security issue.

According to Dawes' (2004) research, RFID adoption in libraries is growing quickly. Despite the fact that not many libraries use this technology at the said period, but still there were several advantages. The price of adopting this technology was out of reach. This study enlightened librarians about the advantages and disadvantages of RFID so they can make an informed decision about whether to utilize the technology.

According to Shahid (2005), RFID (Radio Frequency Identification) enables the tracking and radio communication of objects. The idea behind this technology is comparable to that of a cell phone. To automatically identify persons or items, RFID employs radio waves. There are other ways to identify anything, but the most popular one involves storing a serial number, along with maybe other data, on a microchip that is connected to an antenna (this unit is known as an RFID transponder or an RFID tag).

According to Singh et al. (2006), libraries' use of radio frequency identification enables users to automatically check out and return library materials at any hour of the day. The use of RFID technology promises to improve control over theft, no returns, and incorrect filing of a library's assets in addition to accelerating checkouts, maintaining collections in better order, and reducing repetitive strain injuries among librarians.

Howard & Anderson (2007) studied utility of automated identification in different sectors. According to them one of the numerous items coming under the general heading of automated identification, or auto-ID, is radio frequency identification (RFID). These tools aid machines in object identification. Barcodes, smart cards, voice recognition, and optical character recognition are further auto-ID technologies. The usage of RFID technology dates back roughly 60 years. In an operation known as IFF (Identify Friend or Foe), the Allied Forces utilized it to locate friendly aircraft during World War II. The technology became widely available in the 1980s and was used for anything from tracking cows and other animals to launching equipment down oil wells. The most popular uses are for tracking products, assets, and production-line moving components; for security, such as limiting access to networks and buildings; and for automated payment systems that let consumers to make purchases.

Kumbargoudar & Mestri (2008) analysed the necessity for various forms of information security measures in libraries, recognizing the importance of protecting sensitive patron and institutional data. They examined the different information security systems and technological trends with a specific focus on biometric security technology.

Vasishta (2009) outlines a roadmap for the implementation of RFID technology within the Central Library at PEC University of Technology which guides libraries through the planning, deployment, and management phases of RFID implementation. She stressed that libraries should tailor their RFID adoption strategy to their specific needs and circumstances. This technology has the potential to enhance library services, and also provides a solid foundation for libraries embarking on this transformative journey.

Jharotia (2010) explored the role of RFID technology in enhancing library security and efficiency where RFID can be used as a tool to combat library theft. The technology allows for faster charge and discharging library items, making the library system more accessible.

Ismail & Zainab (2011) Examined the comprehensive assessment of information systems security practices in special and public libraries in Malaysia. The study's findings emphasize the importance of balancing technical security measures with organizational measures to ensure a robust security posture. Libraries can draw valuable lessons from this study to enhance their information system security practices and protect sensitive data and information effectively.

Roy & Basak (2011) explained the usage of RFID in libraries and information centers, which helps streamline major library processes. The article discussed the benefits of RFID technology such as shelf charging-discharging reliability, high-speed inventorying, and automated materials handling.

Ferdinand et al. (2015) discussed the importance of security measures for telecommunication system in libraries. The study's addresses both traditional and electronic security and underscores the multifaceted nature of security challenges. It further suggests to develop effective security strategies that protect their resources, staff and users while adapting to the evolving landscape of security threats and technologies.

Thakre et al. (2016) highlighted the benefits of RFID, including cost-effectiveness, efficiency and security improvements, making it a compelling option for modernizing library operations.This study suggests the use of RIFD over the conventional strips using electromagnetic waves to improve library management and user experiences.

Gupta & Madhusudhan (2017) highlights the substantial benefits of RFID, including cost-effectiveness, efficiency improvements, and enhanced security, making a strong case for its adoption in library operations.The study concluded that generous funding for RFID implementation can significantly improve library services in India.

Nisha (2018) inferred that RFID is the only solution for automating and tracking documents. She expects that in the future, RFID will prove to be more financially affordable and inclusive.

Enidiok et al. (2019) indicated the causes given for library resource theft and vandalism include a lack of copies, insufficient photocopying services, a paucity of essential materials, a personnel shortfall, and poverty. Poor security mechanisms and people' criminal tendencies are important contributors to these issues. The research suggested making appropriate copies of journals and reference materials, purchasing a current security system to regulate or secure existing resources, improving photocopying services, recruiting additional employees, and taking adequate precautions for the library's electronic security.

Orji and Alex-Nmecha (2022) stated that libraries to employ various physical security measures such as CCTV and RFID systems for monitoring and tracking materials.

Ceccato et al. (2023) stated that public libraries serve multiple functions, attracting visitors who borrow books, access computers, and engage in social interactions, imposing a diverse safety requirement for librarians. They highlighted that design and layout of public libraries influence safety, with factors like territoriality and surveillance opportunities

Chourasia (2024) investigated the impact of electronic surveillance systems on book theft and mutilation in Central University libraries in U.P., emphasizing the need for policies on theft, installation of security devices, and adequate resources to enhance library security.

8. RESEARCH GAP

There exist a dearth of specific literature on library security issues in academic institution which deals with crucial areas of investigation such as level of awareness among staff members, availability of contemporary tools and techniques to deal with security issues, and details on specific problems faced by library staff as well as users. As such, the present study had been examined by the researcher in the field of library security, specific to University libraries by drawing on the evidence collected from Jammu region of J&K UT.

9. RESULTS AND DISCUSSION

The Table 9.1 shows the distribution of respondents. The maximum number of questionnaires distributed was 684 .Out of this about 45 questionnaires from the category of Library Staff and about 600 questionnaires from the category of students were received back which were duly filled.

Table 9.1 Frequency Distribution of Questionnaires Distributed and Response Rate

Users	Questionnaire Distributed	Questionnaire Received	Response Rate in %age
Students	600	600	100%
Library Staff	84	45	50%

The respondents were asked about the frequency of distribution of responses on availability of RFID system for check in/check out in the library. Their response is indicated in Table 9.2, 9.3 and Fig 9.1.

Table 9.2 Frequency Distribution of responses on 'RFID System for Check in/check out'

Description	Frequency	Percent	Cumulative Percent
Yes	293	48.8	48.8
No	307	51.2	100.0
Total	600	100.0	

Figure: 9.2 Responses on 'RFID System for Check in/check out

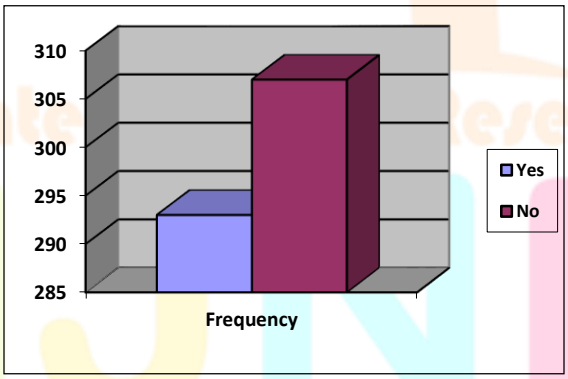

Table 9.3 Descriptive Statistics of responses on 'RFID System for Check in/check out'

Mean		1.5117
Std. Deviation		0.50028
Percentiles	25	1.0000
	50	2.0000
	75	2.0000

Table 9.2,9.3 and Fig 9.1 depicts that out of total 600 responses collected, 293 (48.8%) respondents indicated that the majority of libraries are installed with RFID System for Check in/check out in thelibrary they use, while the remaining 307 (51.2%) respondents indicated that RFID System for Check in/check outare not installed in their library. This response of 51.2% respondents is highly significant and indicates a strict need of RFID adoption in the libraries concerned. The mean and the standard deviation for the data are 1.5117 and .50028 respectively. The first quartile was calculated at 1 while remaining two quartiles stand at 2.

The respondents were asked about the frequency of distribution of responses on availability of CCTV cameras/surveillance in the library. Their response is indicated in Table 9.4, 9.5 and Fig 9.2

Table 9.4. Frequency Distribution of responses on 'CCTV Cameras/Surveillance'

Description	Frequency	Percent	Cumulative Percent
Yes	482	80.3	80.3
No	118	19.7	100.0
Total	600	100.0	

Fig No. : 9.2 Responses on 'CCTV Cameras/Surveillance

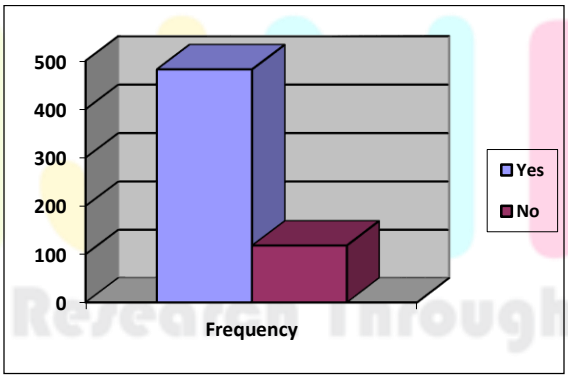

Table 9.5 Descriptive Statistics of responses on 'CCTV Cameras/Surveillance

Mean		1.1967
Std. Deviation		.39781
Percentiles	25	1.0000
	50	1.0000
	75	1.0000

Table 9.4, 9.5 and Fig. 9.2 depicts that out of total 600 responses collected, 482 (80.3%) respondents indicated that the majority of libraries areavailable with CCTV Cameras/Surveillance in thelibrary they use, while the remaining 118 (19.7%) respondents indicated that CCTV Cameras/Surveillanceare not used in their library. This response of 19.7% is found to be significant and suggests for installation of CCTV cameras in the concerned libraries. The mean and the standard deviation for the data are 1.1967 and .39781respectively. All the three quartiles also stand at 1 which represents a clear resonance of respondents about the presence of CCTV Cameras/Surveillance security systems in the libraries under study.

The respondents were asked about the frequency of distribution of responses regarding installation of fire/smoke sensor in the library. Their response is indicated in Table 9.5, 9.6 and Fig No. 9.3

Table 9.5 Frequency Distribution of responses on installation of 'Fire/Smoke Sensor'

Description	Frequency	Percent	Cumulative Percent
Yes	332	55.3	55.3
No	268	44.7	100.0
Total	600	100.0	

Fig No. : 9.3 Responses on installation of 'Fire/Smoke Sensor'

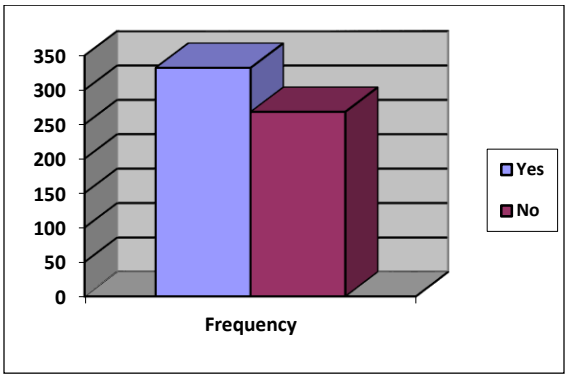

Table 9.6 Descriptive Statistics of responses on installation of 'Fire/Smoke Sensor'

Mean		1.4467
Std. Deviation		.49756
Percentiles	25	1.0000
	50	1.0000
	75	2.0000

Table 9.5, 9.6 and Fig No.9.3 that out of total 600 responses collected, 332 (55.3%) respondents indicated that the majority of librariesare using Fire/Smoke Sensor, while the remaining 268 (44.7%) respondents indicated that Fire/Smoke Sensor are not used in their library. The response of 44.7% found to be significant and suggest that concerned library should use fire/smoke sensor. The mean and the standard deviation for the data are 1.4467 and .49756 respectively. The first two quartiles stand at 1 while the third one stands at 2.

The respondents were asked about the frequency of distribution of responses on installation of moisture sensor in the library. Their response is indicated in Table 9.7, 9.8 and Fig No. 9. 4

Table 9.7 Frequency Distribution of responses on installation of 'Moisture Sensor'

Description	Frequency	Percent	Cumulative Percent
Yes	186	31.0	31.0
No	414	69.0	100.0
Total	600	100.0	

Fig No.: 9.4 Responses on installation of 'Moisture Sensor'

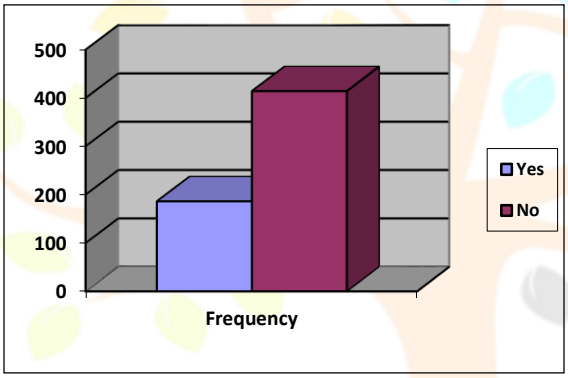

Table 9.8Descriptive Statistics of responses on installation of 'Moisture Sensor'

Mean		1.6900
Std. Deviation		.46288
Percentiles	25	1.0000
	50	2.0000
	75	2.0000

Table 9.7, 9.8 and Fig no. 9.4 depicts that out of total 600 responses collected, 186 (31%) respondents indicated that the majority of libraries areusingmoisturesensor, while the remaining 414 (69%) respondents indicated that moisturesensorare not used in their library. The analysis indicates moisture sensor as one of the significant safety measures that needs to be adopted by the libraries under study. The mean and the standard deviation for the data are 1.6900 and .46288 respectively. The first quartile stands at 1 while the remaining two stand at 2.

The respondents were asked about the frequency of distribution of responses regarding installation of fire alarms in the library. Their response is indicated in Table 9.9, 9.10 and Fig No. 9.5.

Table 9.9 Frequency Distribution of responses on installation of 'Fire Alarms'

Description	Frequency	Percent	Cumulative Percent
Yes	368	61.3	61.3
No	232	38.7	100.0
Total	600	100.0	

Plate No. : 9.5 Responses on installation of 'Fire Alarms'

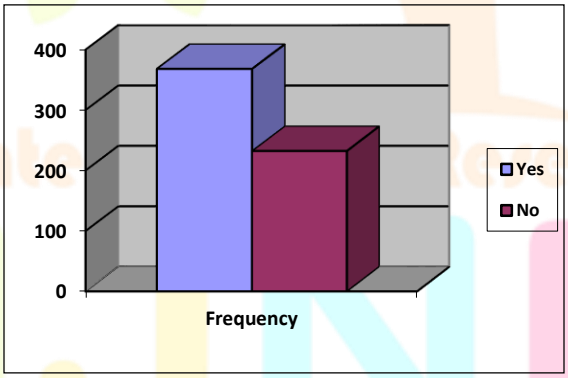

Table 9.10: Descriptive Statistics of responses on installation of 'Fire Alarms'

Mean		1.3867
Std. Deviation		.48739
Percentiles	25	1.0000
	50	1.0000
	75	2.0000

Table 9.9, 9.10 and Fig No. 9.5 that out of total 600 responses collected, 368 (61.3%) respondents indicated that the majority of libraries arefitted with fire alarms, while the remaining 232 (38.7%) respondents indicated the absence offire alarms in their library. The response of 38.7% is found to be is significant and indicates for the concerned libraries to properly install fire alarm system. The mean and the standard deviation for the data are 1.3867 and .48739 respectively. Thefirst twoquartiles stand at 1 while the third was calculated at 2.

The respondents were asked about the frequency of distribution of responses regarding use of smart cards in the library. Their response is indicated in Table 9.11, 9.12 and Fig No.9.6.

Table 9.11 Frequency Distribution of responses on use of 'Smart Cards'

Description	Frequency	Percent	Cumulative Percent
Yes	299	49.8	49.8
No	301	50.2	100.0
Total	600	100.0	

Fig No.: 9.6 Responses on use of 'Smart Cards'

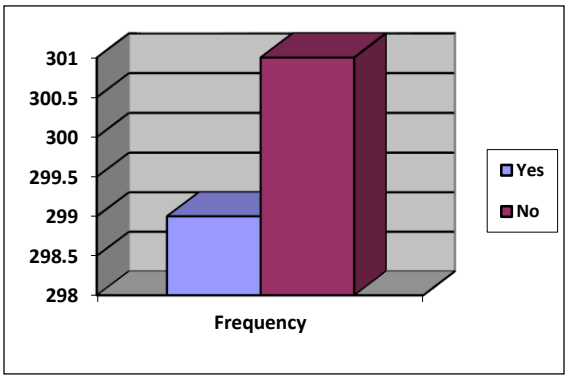

Table 9.12 Descriptive Statistics of responses on use of 'Smart Cards'

Mean		1.5017
Std. Deviation		.50041
Percentiles	25	1.0000
	50	2.0000
	75	2.0000

Table 9.12, 9.13 and Fig no. 9.6 depicts that out of total 600 responses collected, 299 (49.8%) respondents indicated that the majority of libraries areusing smart card, while the remaining 301 (50.2%) respondents indicated smart cardsare not used in their library. Almost half of the responses 50.2% reveal the absence of using smart cards in their concerned libraries. Therefore, the concerned libraries shall use smart card system. The mean and the standard deviation for the data are 1.5017 and .50041 respectively. The first quartiles stand at 1 while the remaining two were calculated at 2.

The respondents were asked about the frequency of distribution of responses on use of barcode technology in the library. Their response is indicated in Table 9.14, 9.15 and Fig No. 9.7

Table 9.14 Frequency Distribution of responses regarding use of 'Barcode technology'

Description	Frequency	Percent	Cumulative Percent
Yes	306	51.0	51.0
No	294	49.0	100.0

Description	Frequency	Percent	Cumulative Percent
Yes	306	51.0	51.0
No	294	49.0	100.0
Total	600	100.0	

Fig No.: 9.7 Responses regarding use of 'Barcode technology'

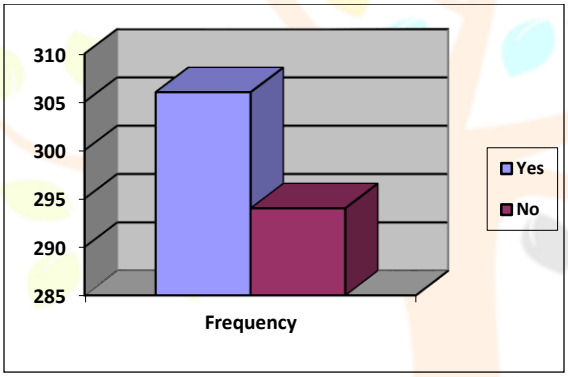

Table 9.15 Descriptive Statistics of responses regarding use of 'Barcode technology'

Mean		1.4900
Std. Deviation		.50032
Percentiles	25	1.0000
	50	1.0000
	75	2.0000

Table 9.14, 9.15 and Fig No. 9.7 depicts that out of total 600 responses collected, 306 (51%) respondents indicated that the majority of libraries are using barcode technology; while the remaining 294 (49%) respondents indicated barcode technology is not used in their library. The response of almost half of the respondents revealed dearth of barcode technology at their parent libraries. Thus, barcode technology as an effective technique shall be implemented in the

libraries under study. The mean and the standard deviation for the data are 1.4900 and .50032 respectively. The first two quartiles stand at 1 while the third was calculated at 2.

The respondents were asked about the frequency of distribution of responses on sensor detectors in the library. Their response is indicated in Table 9.15, 9.16 and Fig No. 9.8

Table 9.15 Frequency Distribution of responses on use of 'Sensor Detectors'

Description	Frequency	Percent	Cumulative Percent
Yes	266	44.3	44.3
No	334	55.7	100.0
Total	600	100.0	

Fig No. 9.8: Responses on use of 'Sensor Detectors'

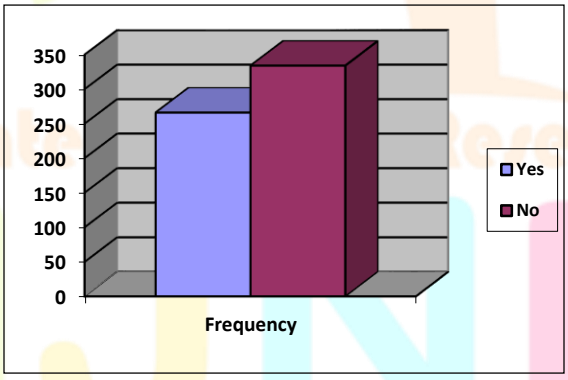

Table 9.16Descriptive Statistics of responses on use of 'Sensor Detectors'

Mean		1.5567
Std. Deviation		.49719
Percentiles	25	1.0000
	50	2.0000
	75	2.0000

Table 9.15, 9.16 and Fig No. 9.8 depicts that out of total 600 responses collected, 266 (44.3%) respondents indicated that the majority of libraries are usingsensor detectors, while the remaining 344 (55.7%) respondents indicated sensor detectors is not used in their library. This suggests that sensor detectors as a tool to advance library security should be implemented at libraries in the study area. The mean and the standard deviation for the data are 1.5567 and .49719 respectively. Thefirst twoquartiles stand at 1 while the third was calculated at 2.

10, FINDINGS

Based on the findings of the study, the following the finding s:-

- About 293 (48.8%) respondents indicated that the majority of libraries are installed with RFID System for Check in/check out in the library they use, while the remaining 307 (51.2%) respondents indicated that RFID System for Check in/check out are not installed in their library. as depicted from Table 9.2, 9.3 and Fig 9.1
- From Table 9.4, 9.5 and Fig. 9.2 depicts About 482 (80.3%) respondents indicated that the majority of libraries are available with CCTV Cameras/Surveillance in the library they use, while the remaining 118 (19.7%) respondents indicated that CCTV Cameras/Surveillance are not used in their library. This response of 19.7% is found to be significant and suggests for installation of CCTV cameras in the concerned libraries..
- As depicted from Table 9.5, 9.6 and Fig No.9.3 about 332 (55.3%) respondents indicated that the majority of libraries are using Fire/Smoke Sensor, while the remaining 268 (44.7%) respondents indicated that Fire/Smoke Sensor are not used in their library. The response of 44.7% found to be significant and suggest that concerned library should use fire/smoke sensor.
- About 186 (31%) respondents indicated that the majority of libraries are using moisture sensor, while the remaining 414 (69%) respondents indicated that moisture sensor are not used in their library. as depicted from Table 9.7, 9.8 and Fig no. 9.4. The analysis indicates moisture sensor as one of the significant safety measures that needs to be adopted by the libraries under study.
- About 368 (61.3%) respondents indicated that the majority of libraries are fitted with fire alarms, while the remaining 232 (38.7%) respondents indicated the absence of fire alarms in their library as indicated in Table 9.9, 9.10 and Fig No. 9.5 . The response of 38.7% is found to be is significant and indicates for the concerned libraries to properly install fire alarm system.
- From Table 9.12, 9.13 and Fig 9.6 it is indicated that about 299 (49.8%) respondents indicated that the majority of libraries are using smart card, while the remaining 301

(50.2%) respondents indicated smart cards are not used in their library. Almost half of the responses 50.2% revealed the absence of using smart cards in their concerned libraries.

- About 306 (51%) respondents indicated that the majority of libraries are using barcode technology; while the remaining 294 (49%) respondents indicated barcode technology is not used in their library as depicted in Table 9.14, 9.15 and Fig No. 9.7. The response of almost half of the respondents revealed dearth of barcode technology at their parent libraries. Thus, barcode technology as an effective technique shall be implemented in the libraries under study that out of total 600 responses collected, 266 (44.3%) respondents indicated that the majority of libraries are using sensor detectors, while the remaining 344 (55.7%) respondents indicated sensor detectors is not used in their library.

11, CONCLUSION

Thus, study reveals that library users are generally well-informed about security-related concerns and play a significant role in identifying and addressing security gaps. The findings aim to assist librarians in enhancing existing security measures and pave the way for continuousimprovements in library security. In an era of rapidly evolving technology, such enhancements are essential to effectively address the challenges faced by library users.,The study emphasizes the importance of user participation in enhancing security protocols and highlights areas where existing measures can be improved. These insights not only serve as a valuable resource for library professionals seeking to strengthen security frameworks but also underscore the need for continual adaptation in the face of rapid technological advancements. By addressing these challenges proactively, libraries can ensure a safer and more secure environment for all users.

12. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are suggested:-

- A proper training and orientation programme must be conducted time to time for both library users as well as library staff to prepare them for handling security issues and using equipment in the time of need.
- An online Security system fitted with firewall, anti-virus, end point protection, data back-up, Wi-Fi security, etc. should be properly developed
- Latest technology available in the market must be adopted from time to time to maintain a sustainable security system in the libraries under study.
- An emergency communication system needs to be installed in the library under study.

- A proper disaster preparedness plan should be put in place in advance to deal with any type of natural or man-made disasters.
- A specific training programme may be organized to train users as well as staff members about library e-Resources and their use.

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