

FACILITIES AND EQUIPMENTS FOR DISASTER PREPAREDNESS AND EXPERIENCES OF LIBRARIANS IN ACADEMIC LIBRARIES IN KEBBI STATE, NIGERIA.

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Abstract

This study investigated the facilities and equipment for disaster preparedness and the experiences of Librarians in academic Libraries of institutions of higher learning in Kebbi State, Nigeria. The objectives were to identify the disaster preparedness facilities and equipment available in academic Libraries and explore Librarians' experiences regarding disaster preparedness. A qualitative phenomenological research design was adopted. Data were collected through structured interviews with six heads of Libraries purposively selected from the institutions. The data were analyzed thematically using NVivo 12 software. The findings revealed that academic Libraries possessed various disaster preparedness facilities and equipment, including fire extinguishers, sand buckets, smoke detectors, sprinklers, dehumidifiers, first aid kits, security systems, climate control systems, and backup power sources such as uninterruptible power supply (UPS) systems, generators, and solar inverters. Most Librarians reported the existence of formal disaster preparedness plans with clearly defined staff responsibilities, fire and flood response procedures, and regular training and simulation exercises. Their experiences further indicated that disaster response commonly involved immediate evacuation, damage assessment, site security, and prioritization of valuable collections. However, one library lacked a formal disaster preparedness plan, while other libraries had no comprehensive documented disaster plan. Inadequate staff training, limited knowledge, insufficient funding, and weak institutional policies also constrained effective preparedness. The study concludes that although most academic libraries possess essential disaster preparedness facilities and established response procedures, strengthening staff capacity, institutional policies, sustainable funding, and comprehensive documented disaster preparedness plans is necessary to enhance institutional resilience and effective disaster preparedness.

Keywords: Disaster Preparedness, Disaster Preparedness Facilities, Disaster Preparedness Equipment, Librarians' Experiences, Academic Libraries, Kebbi State.

Introduction

Academic Libraries are essential knowledge hubs in higher education, housing valuable resources such as research data, Library collections, institutional records, and digital information resources that support teaching, learning, research, and innovation (Awotola & Olowolagba, 2018; Ullah & Usman, 2023). However, they face significant threats from both natural and human-induced disasters, including fires, floods, termite infestations, power failures, vandalism, and cyber-attacks, which can result in the destruction of information resources, disruption of library services, and substantial financial losses (UNDRR, 2017; Alhassan, 2017; Abidin, Kiran, & Samsuddin, 2024). Without effective disaster preparedness and recovery plans, academic institutions may experience prolonged interruptions to teaching, learning, and research activities. Disaster preparedness encompasses proactive measures such as developing emergency response plans, conducting regular drills, training staff, and providing adequate disaster mitigation facilities to reduce risks and ensure continuity of Library services (CDC, 2020; NEMA, 2012). In Kebbi State, Nigeria, where seasonal flooding, fire outbreaks, and termite activities pose persistent risks, limited awareness and inadequate prioritization of disaster preparedness continue to expose academic libraries to hazards that threaten their information resources and institutional operations (Okoli, 2015; Zoagba, 2019).

Facilities and equipment for disaster mitigation play a pivotal role in protecting library resources and ensuring service continuity during emergencies. Academic libraries rely on physical and technological facilities such as fire suppression systems, smoke detectors, fire extinguishers, flood barriers, security alarms, backup generators, uninterruptible power

supply (UPS) systems, dehumidifiers, climate control systems, surveillance cameras, reinforced shelving, waterproofing measures, and emergency lighting to prevent or minimize disaster impacts (Shah *et al.*, 2020; Garnett, 2021; Feather, 2022; McEntire, 2022; Harris, 2021a). The effectiveness of these facilities depends not only on their availability but also on librarians' preparedness, practical experiences, institutional support, and regular training in disaster response (Ashiq *et al.*, 2022; Chisita & Chizoma, 2021; Ferrere & Maniscalco, 2023). Accordingly, this study investigates the facilities and equipment available for disaster preparedness and explores the experiences of librarians in academic libraries in Kebbi State, Nigeria. The findings are expected to provide empirical evidence for strengthening disaster preparedness policies, improving institutional investment in disaster preparedness facilities and equipment, enhancing librarians' preparedness capacity, and promoting the resilience and sustainability of academic libraries.

Statement of the problem

Institutions of higher learning in Kebbi state like many other libraries in Nigeria face significant challenges related to natural disasters and the development of effective recovery plans for their information resources. With the increasing reliance on technology and digital information in academic institutions, the risk posed by disasters including cyber –attacks, natural calamities and data breaches have become a growing concern.

Preliminary investigations by the researcher indicate that there is limited research regarding the vulnerable information resources to disaster and the recovery plans in the institutions of higher learning in Kebbi state. For example, in the institutions where the researcher is employed, the library has suffered multiple fire incidents having been burnt

down approximately three times consecutively highlighting severity of vulnerability to disasters. Given these challenges and vulnerabilities there is a pressing need to focus on research in this context. It is against this background, the study investigated facilities, equipment and preparedness strategies in tertiary institution in Kebbi state with a view to proffer useful recommendations to address the challenges.

Research Questions

The study was guided by the following research objectives:

1. What types of facilities and equipment are available for disaster preparedness in academic Libraries of Kebbi State institution of higher learning?
2. How do Librarians describe their experiences in disaster preparedness in libraries of institutions of higher learning in Kebbi State?

Review of Related Literature

Disaster preparedness in libraries is crucial for ensuring the safety and continuity of library operations, particularly in the face of natural and human-made disasters. According to the National Emergency Management Agency (NEMA, 2012), disaster management involves proactive measures that aim to reduce the impact of hazards, such as floods, fires, and cyberattacks, and ensure the protection of library resources, staff, and services. Sarita and Shraddha (2018) highlight that prevention is the first step in disaster management, with libraries adopting measures like regular building inspections, securing electrical systems, and installing security features to minimize risks. In the preparedness phase, Verma and Shahane (2018) emphasize the importance of creating disaster plans, training staff, and establishing response teams to ensure libraries can respond effectively in an

emergency. This includes maintaining emergency kits, backing up electronic data, and prioritizing high-value materials for salvage.

Disaster management in libraries refers to the strategies and protocols put in place to prevent and respond to emergencies that may affect library collections, services, and facilities. The goal of disaster management in the library is to mitigate the impact of these disasters and ensure the continued operation of library services in the face of adversity (Bastian, 2019).

Facilities and equipment available for disaster mitigation in academic libraries play a pivotal role in ensuring the protection of library resources and the continuity of services during and after a disaster. According to Oyeniran (2023) and Makinde and Maimako (2025), libraries in institutions of higher learning often utilize various physical and technological tools to mitigate disaster risks. These include fire suppression systems, flood barriers, security alarms, backup generators, and climate control devices such as dehumidifiers to safeguard collections from environmental damage. Feather (2022) and Garnett (2021) emphasize that disaster mitigation in academic libraries involves proactive strategies and tangible investments in facilities and equipment aimed at reducing the impact of both natural and human-induced hazards on library resources and services. The availability and effectiveness of such mitigation resources vary significantly across institutions, depending on funding, policy frameworks, and awareness levels.

Methodology

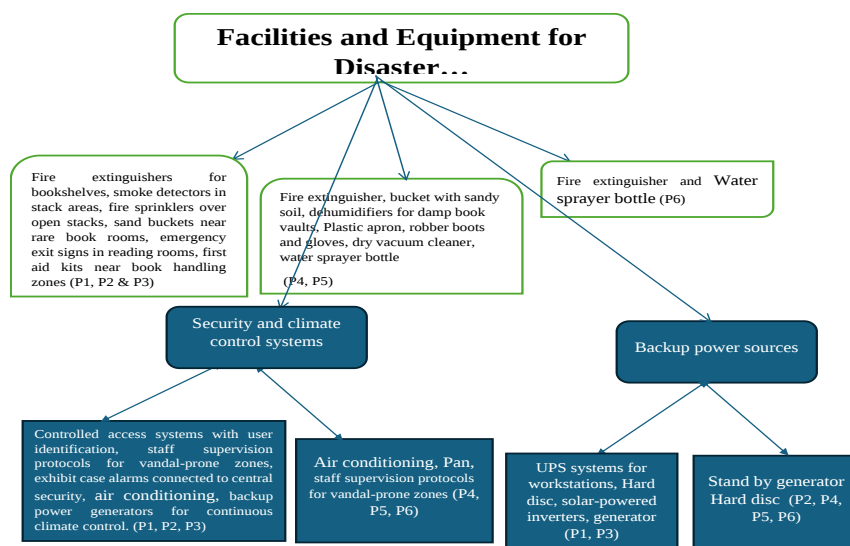
The study employed interpretivist research paradigm for the study. Qualitative method and phenomenological research design were used. The population consists of six

heads of libraries in the institutions, selected through purposive sampling, and data was collected via semi structured printerviews. Thematic analysis with NVivo 12 was used for data analysis.

Results and Discussions

Figure 1: Disaster Preparedness Facilities, Equipment, and Support Systems in Library Environments

1. What types of facilities and equipment are available for disaster preparedness in academic Libraries of Kebbi State institution of higher learning?



The figure 1 revealed that participants identified various facilities and equipment essential for disaster preparedness in academic libraries. Regarding fire prevention and emergency response, P1 and P6 emphasized the importance of strategically placed fire extinguishers, while P2 recommended installing smoke detectors in stack areas for early fire detection. P3 further identified automatic fire sprinkler systems, sand buckets,

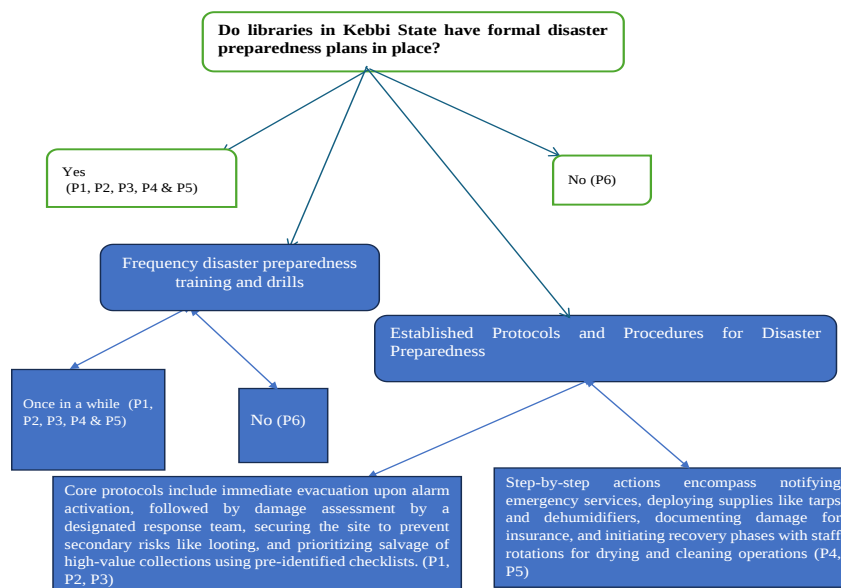
emergency exit signs, and first aid kits as essential safety measures. Similarly, P4 highlighted fire extinguishers and sand buckets for containing small fires, whereas P5 stressed the use of dehumidifiers in damp storage areas to prevent mould growth and preserve library collections. Overall, these responses indicate that effective disaster preparedness requires both fire protection and environmental control measures to safeguard library resources against immediate and long-term hazards.

Regarding security, climate control, and backup power, P1 recommended controlled access systems with user identification and the use of UPS units and hard drives to protect equipment and data during power outages. P2 emphasized staff supervision in vulnerable areas, security alarm systems, and standby generators, while P3 identified air-conditioning systems, solar-powered inverters, and generators as critical for maintaining stable environmental conditions and uninterrupted operations. P4 highlighted air-conditioning and standby generators as essential for preserving library resources during power interruptions. P5 emphasized staff supervision, dehumidification, standby generators, and hard drives for protecting both physical and digital collections, whereas P6 identified basic maintenance equipment, such as pans, alongside fire extinguishers, standby generators, and hard drives as important components of disaster preparedness. Collectively, these findings demonstrate that disaster preparedness in academic Libraries requires an integrated combination of security systems, climate control facilities, backup power sources, and digital storage infrastructure to ensure operational continuity and the long-term preservation of information resources.

The findings revealed that fire extinguishers, sand buckets, smoke detectors, sprinklers, dehumidifiers, first aid kits, staff supervision, exhibit alarms, air conditioning, UPS systems, hard discs, solar inverters, and standby generators are the major facilities and equipment available for disaster preparedness in academic libraries in Kebbi State. These measures support fire prevention, environmental control, security, uninterrupted operations, and the protection of both physical and digital resources. The findings align with studies emphasizing the importance of fire suppression systems, climate control, and disaster preparedness in safeguarding library collections (Flaherty, 2023; Feather, 2022; Galloup, 2016). Similarly, Garnett *et al.* (2018) and Gupta and Margam (2021) highlight the role of staff vigilance, security systems, and environmental monitoring in mitigating risks to library materials. While both the present findings and previous studies advocate an integrated approach to disaster management (Flaherty, 2023; Greene, 2024), a notable difference is that libraries in Kebbi State rely more on manual and low-cost measures, such as sand buckets and staff supervision, than the advanced automated systems and cybersecurity-focused solutions commonly reported in international literature, reflecting contextual adaptation and resource constraints (Greene, 2024; Beattie & Shandrowski, 2021; Fernandez, 2020).

Figure 2: Availability of Formal Disaster Preparedness Plans and Response Protocols in Libraries in Kebbi State

1. How do librarians describe their experience in disaster preparedness in academic libraries in institutions of higher learning in Kebbi State?



The figure above that formal disaster preparedness plans exist in the libraries represented by P1, P2, P3, P4, and P5, whereas P6 reported that no formal plan is currently in place. Similarly, P1–P5 confirmed that disaster preparedness training and drills are conducted regularly to enhance staff readiness, while P6 indicated that such activities are not carried out in their library. P1 explained that the disaster preparedness plans define staff responsibilities, emergency procedures for fire, flooding, and other hazards, and strategies for protecting and salvaging valuable collections. P2 emphasized the importance of regular disaster preparedness training and drills, while P3 identified key response protocols, including immediate evacuation, damage assessment by a designated response team, site security, and prioritized salvage of high-value collections using established checklists. P4 highlighted the need to notify emergency services promptly and document all damage for insurance and accountability purposes. P5 emphasized deploying essential

recovery supplies, such as tarps and dehumidifiers, and organizing staff rotations to ensure efficient drying, cleaning, and restoration of affected collections. These findings demonstrate that disaster preparedness planning in most academic libraries encompasses preventive measures, emergency response procedures, staff capacity building, and post-disaster recovery strategies.

The finding indicated that libraries in Kebbi State generally have formal disaster preparedness plans, as shown in figure 4, although one institution lacks such a plan; these plans address immediate emergencies and long-term risks, assign clear staff responsibilities, include procedures for fire and flooding, and are supported by regular training and drills, while core protocols involve immediate evacuation, damage assessment by a response team, site securing, prioritizing high-value collections, notifying emergency services, deploying supplies like tarps and dehumidifiers, documenting damage for insurance, and organizing staff rotations for restoration aligning with studies reporting increased awareness and documentation of disaster policies (Ijiekhuamhen *et al.*, 2020; Ilo, Nwachukwu, & Izuagbe, 2020a), best practices (Harris, 2021; Flaherty, 2023), and concerns about uneven preparedness (Ilo *et al.*, 2019). However, a critical limitation emerged: although the majority (P1–P5) reported having formal plans and staff (P1–P6) could verbally articulate response actions, no library possessed a written document of these plans, which undermines the definition of a "formal" plan by leaving protocols vulnerable to memory lapses, staff turnover, and inconsistent application, thereby representing a significant vulnerability that must be addressed to ensure consistent,

reliable, and transferable preparedness across all institutions despite commendable awareness.

Recommendations

The study offered the following recommendations

1. Libraries should periodically inspect, maintain, and upgrade mitigation equipment. Where feasible, they should integrate modern automated systems such as sensor-based fire suppression, climate control monitoring, automated data backup, smart CCTV surveillance, and UPS with automatic power switchover to enhance efficiency and reliability.
2. Libraries should regularly review and update disaster preparedness plans to ensure they remain current and effective. Plans should be widely distributed to all staff, and responsibilities should be clearly defined.
3. Libraries should conduct regular disaster preparedness training and mock drills for all staff members. Training should cover use of fire extinguishers, evacuation procedures, damage assessment, and salvage techniques.

4. Conclusion

5. This study on disaster preparedness in academic libraries within state-owned tertiary institutions in Kebbi State, Nigeria, found that while most libraries are equipped with essential facilities and equipment, such as fire extinguishers, smoke detectors, sprinklers, backup power sources, and security systems and have formal disaster plans outlining staff responsibilities, response protocols (including evacuation and collection prioritization), and regular training, significant gaps

remain. These include the absence of a formal plan in one library, along with challenges like limited staff knowledge, inadequate training, financial constraints, and weak institutional policies, all of which require targeted attention to strengthen overall disaster readiness.

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