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**A SURVEY OF DISASTER MITIGATION STRATEGIES ADOPTED IN ACADEMIC LIBRARIES IN ENUGU STATE.****By**

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and

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**Abstract**

The study was aimed to examine the disaster mitigation strategies adopted in academic libraries in Enugu State. A descriptive research design was adopted for the study. The population of the study comprised all fifteen (15) heads of the academic libraries in Enugu State. A questionnaire was used as instrument for data collection. Data collected were then analyzed using descriptive statistics of mean and standard deviation. Findings revealed that the provision of user education to the patrons and proper data documentation in the library are the disaster mitigation strategies mostly adopted in academic libraries in Enugu State. The study also discovered that power failure in the library leading to the distortion of disaster mitigation strategies among others is the major challenge facing the effective adoption of disaster mitigation strategies in academic libraries in Enugu State. Based on the findings, it was recommended that academic libraries should endeavor to digitize their collection, provide alternative power supply, and enhance their security systems. Adequate funds should be provided for the mitigation of disaster in academic libraries while maintenance culture should be highly encouraged.

**Keywords:** Disaster Management; Disaster Mitigation; Academic Libraries; Librarian; Enugu State; Nigeria

**Introduction**

Academic libraries are libraries that are located in higher institutions of learning like universities, polytechnics or colleges of education, colleges of agriculture, colleges of technology and research institutes too. These libraries play a crucial role in facilitating learning in higher institutions as they are at the forefront of providing diverse information to researchers in their parent institutions. They support the school's curriculum by providing the research needs of the staff and students of their parent institution. The users of academic libraries are students,

lecturers, and also the whole academic community (Aina, 2005). Academic libraries are instituted to serve the interest of their parent institutions in numerous ways. They conduct and coordinate research activities hand in hand with the knowledge needs of their parent institution. Protection and security of library resources is additionally a basic function of academic libraries (Edoka, 2000). Academic libraries are created to extend the standard of their parent institution directly. According to Okiy (2012), the library is the beating heart of higher education; thus, the quality of these institutions' products is heavily influenced by the information resources provided by their libraries for teaching and research in order to provide students with the skills and knowledge they require. The services provided by an academic library differ from one unit to the next. Units include the circulation, acquisition, serial, references, and cataloguing or documents units. Each unit works in concert with the others to meet the demands of the users. Academic libraries, as stewards of knowledge, also protect their resources against natural disasters, resulting in seamless services that suit the needs of their users.

Disaster can mean various things to different people. Hansford, Dellor and MacPherson, (2007) view disaster as an occasion, either natural or man-made, that causes immense suffering or destruction. It's a social crisis that happens when a hazard coincides with a vulnerable situation, leading to a big loss of life, severe life-threatening disruption and substantial physical damage. Disaster in academic libraries can be natural, i.e. from natural/environmental causes, for instance, earthquake and flooding, or man-made, i.e. induced by the acts of man, for instance, mutilation and theft. Disaster, according to Khan, Vasilescu, and Khan (2008), is a sudden, unfavorable, or unlucky extreme event that causes significant damage to human as well as plants

and animals. Disasters strike suddenly, indiscriminately, and without warning. It occurs unexpectedly and indiscriminately.

Since the dawn of time, disaster has been a part of man's life. It's a complicated mix of natural disasters and human activity.. Disasters have always co-existed with civilizations that have developed initiatives leading to the establishment of various infrastructural and permanent assets, according to Khan, Vasilescu, and Khan (2008). This implies that a disaster has struck every facet of man's endeavor. Earthquakes, floods, strong rains, tornadoes, hurricanes, and tsunamis are all common occurrences in many geographical places. Fires, power outages, mold, and pest infestations have all caused emergencies, spoiled library materials, and hampered library services.

Several academic libraries have lately been destroyed by fire. According to Chawinga and Majawa (2018), the Mzuzu University Library in Mzuzu, Malawi, was damaged by fire, which was thought to be caused by a defective electric connection, burning approximately 45,000 books as well as numerous other computers. The library could not have been destroyed if the firefighters were active and trained, according to the scholars, because they did not extinguish the fire that destroyed the university's library at the same time, despite being purportedly called twenty times before responding. Flash floods struck the Astra Campus of Zimbabwe's Bindura University of Science Education in another incident in 2015. They damaged scientific and computer laboratories, lecture halls, and staff offices, as well as the university library and roughly one-fifth of its collection of over 3,000 books. Around 3,000 students from three of the five university faculties (agricultural, science, and humanities) used the library. Even

before the floods, increasing student enrollment at Bindura University was a difficult issue for the university's libraries to meet the increased demand for books (Hayes, 2016). As a result of the library's destruction by fire, the services provided by the library were severely disrupted. The consequences of a disaster for an educational library are terrible because it could jeopardize the library's whole collection and services. This could result in library closures, damage to library materials and structures, a reduction in the volume of library materials such as books, journals, periodicals, computers, and other items, as well as bad library services and frustration among users. As a result, there is a desire in academic libraries for disaster mitigation..

Disaster mitigation is not an easy task. According to Choji (2014), disaster mitigation is a step of disaster management that tries to mitigate disaster consequences in academic libraries, archives, and all information centers. Because it may not be feasible to avoid the effects of a disaster, such as injuries and loss of life and property, mitigation is the action taken to lessen the impact of the disaster. The mitigation of the disaster defined above entails recognizing the inevitability of its occurrence and preparing ahead of time, the response in terms of reactions to remedy the situation after the occurrence and methods of recovering or restoring damaged resources to normalcy. Disaster mitigation involves the availability of finance and wider supervision issues such as risk assessment and training.

Disaster mitigation involves all the actions aimed at minimizing the effects of disaster such as taking a vulnerability analysis of the location and conducting a public education program on a potential disaster within the location. Mitigation is the action to reduce the consequences of a disaster impact such as injuries and loss of life and properties, since it may not be possible to

prevent all disasters. This phase is also referred to as pre-disaster mitigation. At the mitigation stage, the emphasis is on meeting the basic needs of the people until a more permanent solution can be assessed. Preventive measures are instituted to ameliorate the adverse effects disaster can impose.

When disaster incidents occur, rare and expensive materials could be destroyed. Warfield (2008) illustrates that adopting disaster mitigation takes time and resources of the library and librarians. This involves a lot of money and labor. Notwithstanding, there is a need to plan and adopt disaster mitigation strategies in academic libraries, not only to minimize permanent damage or loss to a collection but also to stop disaster from occurring. This study, being an institution based study, was taken with the need to find out the disaster mitigation strategies adopted in academic libraries in Enugu State.

### **Statement of the Problem**

Academic libraries as the hub of academic training in higher institutions will experience a decline in their services, and the much-needed support to the parent institutions can never be optimized when the library resources are subjected to unpleasant experiences of disaster. Effective disaster mitigation strategies in these libraries are necessary. Disaster mitigation strategies will protect library resources and remove unexpected hitches from service delivery.

Moreover, there is no evidence that academic libraries in Nigeria may be ready to mitigate disasters. Suleiman (2009) noted that they may be inadequate to cope with the magnitude of the imminence of disaster. Also, there is no empirically derived data or findings on

the status of disaster mitigation in these libraries, particularly in Enugu State. This insufficient or outright lack of information for the academic library especially in Enugu State has attained a worrisome height. As a result, there are growing concerns about the numerous challenges encountered by these libraries in their quest for effective service delivery amidst disaster occurrences. This is what prompted the researchers to embark on this study on disaster mitigation strategies adopted in academic libraries in Enugu State.

### **Research Questions**

The researchers put up the following research questions to guide the study:

1. What are the disaster mitigation strategies adopted in academic libraries in Enugu State?
2. What are the challenges faced in the adoption of disaster mitigation strategies in academic libraries in Enugu State?

### **Literature Review**

Disaster mitigation is part of a disaster management process. Disaster management is a process and as such, involves practical and adaptable phases. Coppola (2011), suggested different phases that can be incorporated into the process of disaster management. Coppola suggested that comprehensive disaster management is based on four distinct components: mitigation, preparedness, response, and recovery. Mitigation is the first phase of the process and as such, involves central to the success of the whole process.

The mitigation stage is the first and most important stage in a disaster management process, as other stages cannot thrive until the mitigation stage is completed. Mitigation processes, according to Aburuki (2016), significantly reduce the likelihood of disaster

occurrence or reduce the consequences of inevitable disasters. Natural hazards pose a threat to life, property, social and economic activities, and natural resources, hence these steps are necessary. According to Njoroge (2014), a mitigation procedure will comprise frequent inspection of structures and resources, proper storage of supplies, and fire detection and suppression systems as the first stage in disaster management. Building codes, vulnerability evaluations, sectionalization and land use management, building laws and safety rules, preventive health care, public education, and insurance programs are all possible mitigation methods. According to Shardai (2016), strong mitigation aids public managers in coordinating strategies in hazard management. Goals to be achieved by these programs include:

- Seek ways to prevent a threat. For example, aspire to reduce the chances of damages before a disaster occurs.
- Construct programs that make quality service its main concern.
- Consider ways to prevent exposure to threats by incorporating elements of warning systems, public education, dangerous goods routing bylaws and risk-based land-use planning.

These objectives will serve as a guide for administrators as they develop mitigation techniques and tools for area plans, zoning ordinances, risk mapping, construction codes, property acquisition, public facility use, and taxes. Prospective legislation can then support programs to lessen threats as flood and earthquake prevention measures. Some examples of

disaster mitigation strategies have been identified by Queensland Government (2018), to be concerning:

- **Land use planning and building codes:** Land use planning can be an effective method to reduce the impact of natural hazards and, where possible, avoid risk to life, property and environmental systems from natural hazards. Regulatory frameworks for buildings (e.g. Acts, Regulations and Codes) ensure buildings and infrastructure are designed and constructed to standards that minimize the likelihood of injury during a disaster event. Most levels of government implement requirements that control land use planning and building design and construction and reduce risks from natural hazards.
- **Essential infrastructure:** Essential infrastructure consists of those physical facilities, information technologies and communication networks which, if damaged, ruined or made unavailable for a long period, would notably affect the social or economic well-being of the community. Mitigating the effects of disaster occurrences and certifying the reliability of indispensable services and infrastructure involves a variety of strategies including compliance with building planning regulations, land use planning and an all-hazards approach to risk identification and management
- **Structural works:** Structural disaster mitigation strategies involve the application of engineered solutions as disaster mitigation strategies including physical structures, for example, flood mitigation dams, drainage works, etc., which are constructed or modified to reduce or eliminate disaster impacts. The application of structural works as a form of



mitigation is not necessarily the most cost-effective approach and may transfer the problem. Therefore, structural mechanisms form one option in a group of mitigation strategies including natural landscape and environmental approaches

- Landscape and environment: The appropriate management and protection of landscapes and the environment are important. All organizations must consider the effects of development relative to the landscape and environment. Assessment of coastal-based development is undertaken to ensure development protects and conserves coastal resources. This also enhances the resilience of communities.

University libraries, particularly in developing countries such as Nigeria, are confronted with numerous issues, the most serious of which is a lack of finance. This lack of financing necessitates the implementation of severe mitigation strategies to protect the current library building and its resources from harm (Ijiekhuamhen, Omosekejimi and Rhima, 2020). However, funding can never be taken out of the necessary needs for the effective implementation of disaster mitigation strategies in university libraries. Echezona, Ugwu and Ozioko (2015) insists that problems to an effective disaster mitigation strategy, just like any other disaster management strategy in an academic library, include lack of adequate facilities, inadequate fund allocation to libraries and lack of interest on the part of some librarians on disaster mitigation issues.

In the context of this study, disaster mitigation strategies can be seen as those procedures adopted in order to alleviate the impact or risks of disaster in an academic library. This line of action is taken to reduce the fatal consequences of a disaster that can happen in an academic

library. Examples include library user education, insurance programs, vulnerability analyses, adoption of building laws, etc.

For academic libraries to flourish, a variety of disaster mitigation methods must be considered to provide successful library services. According to Bansal (2015), libraries should: follow an effective disaster mitigation plan; conduct periodic full-scale mock drills; ensure that library buildings, equipment, collections, and computers are fully insured; provide good drainage and flood-proofing; conduct regular checks on library buildings regarding water leakage systems; maintain library buildings and properties; and conduct regular inspections of buildings and equipment. Other measures include checking fire extinguishers for expiration and training staff members on how to use the equipment in an emergency; installing electrical installations in a safe mode with single switch control; treating termites regularly; and ensuring that library materials are digitized. However, based on the review of related literature, no study has been conducted on the disaster mitigation strategies adopted in academic libraries in Enugu State. This is the gap this study hopes to fill.

### **Methodology**

A descriptive survey research design was used for the study. The population of this study consists of 15 heads of the academic libraries studied. There are only 15 heads of academic libraries in Enugu State. The entire population was used because the population was manageable enough for the study. The research instrument used to collect data for the study was the structured questionnaire. The data was collected and analyzed using descriptive statistics such as mean and standard deviation in analyzing the research questions

## Results and Discussion

**Research Question 1:** What are the disaster mitigation strategies adopted in academic libraries in Enugu State?

**Table 1:** Mean ratings of respondents on the disaster mitigation strategies adopted in academic libraries in Enugu State.

S/N	Items	SA	A	D	SD	Sum	$\bar{X}$	Rank	STD	Dec
1.	Conducting vulnerability analyses of location is done	1	6	1	7	31.00	2.07	8 <sup>th</sup>	1.10	D
2.	There is air conditioning of the library rooms	1	6	2	6	32.00	2.13	7 <sup>th</sup>	1.06	D
3.	Risk mapping is done	1	4	1	9	27.00	1.80	10 <sup>th</sup>	1.08	D
4.	Adequate security check of patrons is done	2	6	1	6	34.00	2.27	6 <sup>th</sup>	1.16	D
5.	There is availability of adequate charging practices	1	10	2	2	40.00	2.67	3 <sup>rd</sup>	.82	A
6.	Adequate user education is provided	4	7	1	3	42.00	2.80	1 <sup>st</sup>	1.08	A
7.	There are fire detection and suppression systems	1	5	3	6	31.00	2.07	8 <sup>th</sup>	1.03	D
8.	Proper data documentation is done	2	10	1	2	42.00	2.80	1 <sup>st</sup>	.86	D
9.	There is regular inspection of library building and resources	1	9	1	4	37.00	2.47	4 <sup>th</sup>	.99	D
10.	Proper storage of library resources is done	1	9	1	4	37.00	2.47	4 <sup>th</sup>	.99	D
11.	Recommended building designs/codes are used	2	2	2	9	28.00	1.80	10 <sup>th</sup>	1.15	D

SA =Strongly Agree, A =Agree, D =Disagree, SD = Strongly Disagree,  $\bar{X}$  = Mean,

Table 1 shows the responses from the academic libraries studied, on the disaster mitigation strategies adopted. The table confirms that provision of user education and proper data documentation are the two major mitigation strategies adopted, with their mean values tied at 2.80. The least adopted disaster mitigation strategies include the use of recommended building designs/codes and risk mapping, with their mean values also tied at 1.80.

Fabumni (2013) corroborated this finding while stressing that there is the need to create a user awareness campaign on a disaster in the library using all available mediums, such as handbills, posters, bulletins, radio, and television among others. Also supporting this finding, Adadu and Ianna (2019), in the findings of their research on Disaster Management in Academic Libraries in Benue State, Nigeria, also buttressed the importance of enlightenment campaigns and training on the disaster in academic libraries. They recommended that awareness programs on disaster management in academic libraries should frequently be organized for librarians to increase the level of awareness of information provision on disaster management in the library. On proper data documentation, Waweru (2014) reiterated the point while insisting that maintaining and updating the appropriate data and documents are essential in supporting the implementation of the preparedness plan.

**Research Question 2:** What are the challenges faced in the adoption of disaster mitigation strategies in academic libraries in Enugu State?

**Table 2:** Mean ratings of respondents on the challenges faced in the adoption of disaster mitigation strategies in academic libraries in Enugu State.

S/ N	Items	SA	A	D	SD	Sum	$\bar{X}$	Rank	StD	Dec
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1.	There are power failures in your library distorting disaster mitigation strategies	2	11	1	1	44	2.93	1 <sup>st</sup>	.70	A
2.	There is poor maintenance of disaster mitigation resources in your library	1	11	2	1	42	2.80	2 <sup>nd</sup>	.68	A
3.	Digital disaster (loss of digital data vital for the daily business) occur in your library	1	9	2	3	38	2.53	5 <sup>th</sup>	.92	A
4	There are acts of negligence by library staff in your library	1	10	1	3	39	2.60	4 <sup>th</sup>	.91	A
5.	There is adequate funding allocations	1	1	2	11	22	1.50	7 <sup>th</sup>	.92	D
6.	There is lack of provision and maintenance of adequate facilities	1	11	2	1	42	2.80	2 <sup>nd</sup>	.68	A
7.	There is a poor structural design of the library	1	8	1	5	35	2.33	6 <sup>th</sup>	1.05	D
8	Disaster mitigation training is used in checking disasters	1	1	2	11	22	1.47	8 <sup>th</sup>	.92	SD

SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree,  $\bar{X}$  = Mean,

Table 2 shows the responses from the academic libraries under study, on the challenges faced in the adoption of disaster mitigation strategies in academic libraries in Enugu State. The analysis indicates that power failures in the library that distorts disaster mitigation strategies, poor maintenance of disaster mitigation resources and lack of the provision and maintenance of adequate facilities are the major challenges to the adoption of disaster mitigation strategies in academic libraries in Enugu State. These items are of the mean values of 2.93, 2.80 and 2.80 respectively. The analysis also indicates that adequate funding allocations and the use of disaster mitigation training to check disasters are the least disaster mitigation strategies adopted, with mean values tied at 1.1.50 and 1.47 respectively.

Buttressing on this point, Echezona, Ugwu, and Ozioko (2015) reported that some of the obstacles encountered in disaster mitigation in academic libraries include a lack of proper

facilities, insufficient fund allocation to libraries, and a lack of interest on the side of some librarians in disaster management issues.

In line with above findings, the researcher observed that 4 out of the 15 academic libraries studied are yet to embrace both user education of their patrons and proper data documentation in the library as disaster mitigation strategies. This may increase the exposure of these libraries to disaster.

### **Conclusion**

Disaster mitigation strategies are essential ingredients for a good management of an academic library. An adoption of these strategies reduces the proneness of these libraries to disaster, thereby creating a secured academic library with an increased confidence of the library patrons. It was evident that disaster mitigation strategies are not adequately adopted in the academic libraries in Enugu State. This adoption process has been limited by some factors including power failures in the library and lack of the provision and maintenance of adequate disaster mitigation facilities among others.

However, it was equally noticed that some academic libraries have failed to adopt adequately, disaster mitigation strategies that has proven to secure the library, its collection and services against disaster occurrences, thereby rendering the library prone to some of these disasters. Therefore, some special needs of the library, to the effect of facilitating adequate adoption of disaster mitigation strategies, should be met.

### **Recommendations**

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

1. Academic libraries should endeavor to digitize their collection, provide alternative power supply, and enhance their security systems. These will help the libraries in disaster mitigation strategies
2. Adequate funds should be provided for the mitigation of disaster in academic libraries. This will greatly help in the installation and application of technological systems like geographic information systems, heat smoke detectors and remote sensing technology, dehumidifiers and back up resources.
3. Maintenance culture should be highly encouraged in the library. Repair of leakages of any sort, whether roof, water pipes, faulty air conditioners, fire extinguishers should be treated with utmost urgency
4. Frequent staff training, seminars and workshops should be held to raise understanding of the contents of the disaster management policy, allowing the library to battle disasters more efficiently and effectively as a team.

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