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Disaster Management of Flood Affected Public Libraries of South Kerala

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ABSTRACT

This study was designed to examine disaster management of flood affected public libraries of south Kerala. The population selected for the study was flood-affected libraries of South Kerala, affiliated to Kerala State Library Council. According to Kerala Library Council, the 2018- 19 flood-affected 113 libraries in Pathanamthitta, Alappuzha, and Kottayam district, among which 95 libraries were selected. The samples were collected from 95 professional and non-professional staffs of these libraries. A structured questionnaire is prepared based on objectives of the study with closed-ended and open-ended questions for the flood-affected libraries of south Kerala. To facilitate quantification and analysis of data, primarily close-ended questions were used. The questionnaire was distributed to librarians of flood-affected

libraries of south Kerala. The findings of this study the 2018-19 floods made huge destruction in the public libraries of south kerala and almost 60-80% flood affected 85.26% of the library.

Keywords: *Disaster Management, Flood Affected Public Libraries, South Kerala*

1. Introduction

Disasters are unfortunate events that affect the normal routines of life in society. Disasters also effect libraries in many ways, ranging from danger to the staff and users as well as damage to resource and infrastructure. A disaster is an occurrence arising with little or no warning. It happens with such a magnitude that it destroys normal life for a long period and requires major effort for the community or country, where it happens, to overcome its effects." A disaster is a serious disruption of the functioning of a society, causing widespread human material or environmental losses which exceed the ability of the affected society to cope using only its own resources "(United Nation, 1992).

Kerala is a state along the coast of the southernmost tip of India. Kerala has been prone to disasters like floods and landslides owing to a high amount of rainfall it received in the previous years. The month of August 2018 saw the biggest ever flood accompanied by landslides in the state of Kerala. This was one of the worst ever disaster that the state of Kerala passed through. The floods also affected many public libraries in the state having a large network of public libraries in its villages besides these in the cities.

About 228 libraries functioning under the Kerala State Library council were damaged in the 2018 floods. Besides the libraries affiliated to the council, many other libraries were also affected. These were libraries belonging to clubs, social groups and other organizations (How floods damaged public libraries in Kerala, 2018).

2. Related Studies

A study was conducted by Promise (2020) about Librarians' perception of disaster preparedness as precursor for effective preservation and conservation of library resources in Nigerian university libraries. The study examined librarians' perception of disaster preparedness and its effect on effective preservation and conservation of library resources, focusing on university libraries in the Southwest geopolitical zone

of Nigeria. The study concluded with the observation that, preservation and conservation of information resources would be more effective if disaster preparedness measures are incorporated into the process.

Another study was conducted by Jianliang (2019) about an Internet of things based material delivery model for disaster management in libraries. The study examined Purpose based on the context of the Internet of Things (IoT), the territorial public emergency supplies will be networked, platform-based management, unified emergency dispatch. The problem of supplies dispatching in the “last kilometer” of emergency is solved, and the supplies needed in the disaster area are promptly delivered to the hands of the victims so that they can quickly be rescued after the disaster and to save valuable time for rapid rescue, which can greatly decrease casualties and property losses. The study analyzed the shortage of existing emergency supplies dispatching research and taking all factors such as disaster area demand, social reserve, road conditions, mode of transport, loading limit, disaster area satisfaction rate and road capacity into consideration under the background of IoT, a variety of the territorial emergency supplies dispatching model with more rescue points, more affected areas are constructed.

Daryl (2019) conducted a study on Fire, water, bombs: Disaster management among academic libraries in Marawi City, Lanao del Sur, Philippines. The paper gave in the last ten years; the majority of the 13 respondent libraries have sustained at least one disaster that may have been caused by civil unrest, war or terrorism, flood, earthquake, or fire. The majority was unprepared to face such disasters, may it be small-scale or catastrophic, and only one library has a disaster management plan. The study was concluded the lack of significant holdings of rare books, shortage of financial resources, no perceived risk, and the unavailability of staff to write a disaster management plan, are the reasons why most libraries do not have a plan. Moreover, the majority lacked staffs that have undergone training in disaster preparedness and management.

3. Objectives

The major objectives of the study are;

1. To study how many public libraries are affected by flood in south Kerala.
2. To examine the vulnerability of libraries to disasters.
3. To find out whether library building withstand a disaster.
4. To find out the current status of disaster precautions taken by the libraries.
5. To offer suggestions for better disaster management of the libraries.

4. Method

A literature survey was the basic methodology selected for conducting the study. This includes the use of sources like primary and secondary periodicals, books, conference proceedings, research reports, and others which are related to the subject of study. Literature that is related to the study is taken with utmost care. The population selected for the study was flood-affected libraries of South Kerala, affiliated to Kerala State Library Council. According to Kerala Library Council, the 2018- 19 flood-affected 113 libraries in Pathanamthitta, Alappuzha, and Kottayam district, among which 95 libraries were selected. The samples were collected from 95 professional and non-professional staffs of these libraries. A structured questionnaire is prepared based on objectives of the study with closed-ended and open-ended questions for the flood-affected libraries of south Kerala. To facilitate quantification and analysis of data, primarily close-ended questions were used. The questionnaire was distributed to librarians of flood-affected public libraries of south Kerala.

5. Results and Analysis

5.1 District wise Distribution of the Respondents

Heavy rain and sea erosion wreaked havoc in different parts of Kerala. Incessant rain that lashed the state caused extensive damage to life and properties. Low lying areas in the district have been inundated. Kuttanadu, a below sea level area spread across Alappuzha was literally swallowed by rainwater. Table 1 depicts the district-wise distribution of libraries.

Table 1

District-wise Distribution of the Respondents

District	Frequency	Percentage
Pathanamthitta	31	32.63
Alappuzha	46	48.42
Kottayam	18	18.95
Total	95	100.00

It's pretty clear from the above study that how much the flood had affected the libraries in south Kerala. About 48.42% of libraries in Alappuzha were hit by the flood followed by Pathanamthitta district with 32.63% of its libraries swallowed by rainwater and then with its 18.95% libraries affected Kottayam holds the third place.

5.2 Number of Library Professionals

Both professional and semi non-professional librarians were selected as sample respondents. Library council employs non-professional librarians more than the professional ones. Table 2 given below provides a professional wise distribution of the sample. The table provides the professional status of the respondents.

Table 2

Number of Library Professionals

Status		Frequency	Percentage
Professional	1	1	1.05
Semi and Non-Professional	1	85	89.47
	2	10	10.53

From the study above it can assess that 89.47% librarians were employed by the library council is semi and non-Professional.

5.3 Age-wise Distribution of Libraries

Kerala library council has very old libraries. In the table given below shows the age group of libraries.

Table 3
Age-wise Distribution of Libraries

Age	Frequency	Percentage
Below 15	6	6.32
15-24	18	18.95
25-34	16	16.84
35-44	9	9.47
45-54	22	23.16
55-64	8	8.42
65-74	10	10.53
75 and above	6	6.32
Total	95	100.00

From the above study, it is evident that most buildings (23.16%) had an average age of 45-54 years. And almost the whole the libraries are built before ten years old.

5.4 Percentage of Flood-affected in South Kerala

Flood is one of the most common disasters in the state of Kerala. The proximity of man-made features like dams and geographical features like rivers increase the chances for the flood. Floods can prove to be devastating for libraries as it equally affects the users, staff and resources of the library. Table 4 shows the level of risk of floods in the libraries included in the sample.

Table 4
Percentage of Flood-affected in South Kerala

The Extent of Flood-Affected	Frequency	Percentage
80 and above%	8	8.42
60-79.9%	81	85.26
40-59.9%	4	4.21
20-39.9%	1	1.05
Below 20%	1	1.05
Total	95	100.00

From the above study, it is clear that 60-79 % of the damage was reported by 85.26% of the libraries in a rural area, and the last year flood has affected the libraries insignificantly.

5.5 Variation in Vulnerability of Libraries to Disasters

In order to assess the variation in the vulnerability of libraries to disasters among respondents from flood-affected libraries, the research hypothesis is formulated as H1: there is no significant district wise variation in the nature of disaster vulnerability of libraries. The variation in the district wise vulnerability of libraries to a disaster was examined by ANOVA and MANOVA test. The result of the analysis is presented in below Table 5.

Table 5

Variation in Vulnerability of Libraries to Disasters

Disasters		District			ANOVA		MANOVA	
		Pathanamthitta	Alappuzha	Kottayam	F	Sig.	F	Sig.
Flood	Mea	4.94	4.93	5.00	0.326	0.72		
	n							
Earthquake	SD	0.36	0.33	0.00				
	Mea							
Fire	n	1.00	1.00	1.00	.	.		
	SD	0.00	0.00	0.00				
Lightening /heavy rains	Mea	1.00	1.13	1.00	1.655	0.19	8.05	0.00
	n							
Termites/ Moulds /fungus	SD	0.00	0.50	0.00		7	6	0
	Mea							
/fungus	n	5.00	4.89	5.00	2.893	0.06		
	SD	0.00	0.31	0.00		0		
Moulds	Mea	2.00	3.41	2.94	20.30	0.00		
	n							
/fungus	SD	0.00	1.05	1.43	7	0		
	Mea							

Not significant (p>0.05):

***significant (p<0.05)**

From the study, it is clear that the vulnerability of libraries to different disasters the libraries affected by Termites/Moulds/ Fungus at Alapuzha is the highest (mean score 2.00, p =0.00<0.05) followed by Kottayam (mean score 2.94, p=0.00<0.05) and the least affected library was Pathanamthitta (mean score=2.00, p=0.00<0.05) and the significance level is less than 0.05 in ANOVA test. The result indicates that there is significant district wise difference in the above disaster. However, when all the disaster is taken together, there is a significant difference in the vulnerability with respect to the district as the significance level of F value related to MANOVA is less than 0.05. The result indicates that the vulnerability to disaster is not the same in the

study district. Hence the result rejects the null hypothesis that there is no significant district wise variation in the nature of disaster vulnerability of libraries.

5.6 Location Floor of the Independent Library

Public libraries are generally accommodated in smaller buildings compared with other institutions like hospitals, schools, colleges, etc. many public libraries of today had a humble start. Table 6 depicts the capacity of the library building to withstand a disaster.

Table 6

Location Floor of the Independent Library

Status		Frequency	percentage
Status of the building	Independent building	88	92.62
	No independent building	7	7.37
The floor where the library is located	Ground floor	4	57.14
	1-3	3	42.86
	4th floor and above	0	0.00
		7	100.00

The study shows that 92.62% of the libraries included in the study have an independent building, and 7.37% of the libraries did not have an independent building.

5.7 Measure Taken for Preventing Disaster in Libraries

In order to assess the variation between measures taken for preventing disaster in the libraries, the research hypothesis is formulated as H2: There is no significant difference in measures taken for preventing disaster among libraries form rural and urban areas were examined by Kolmogorov-Smirnov Z test. The result of the analysis is presented in the below figure.

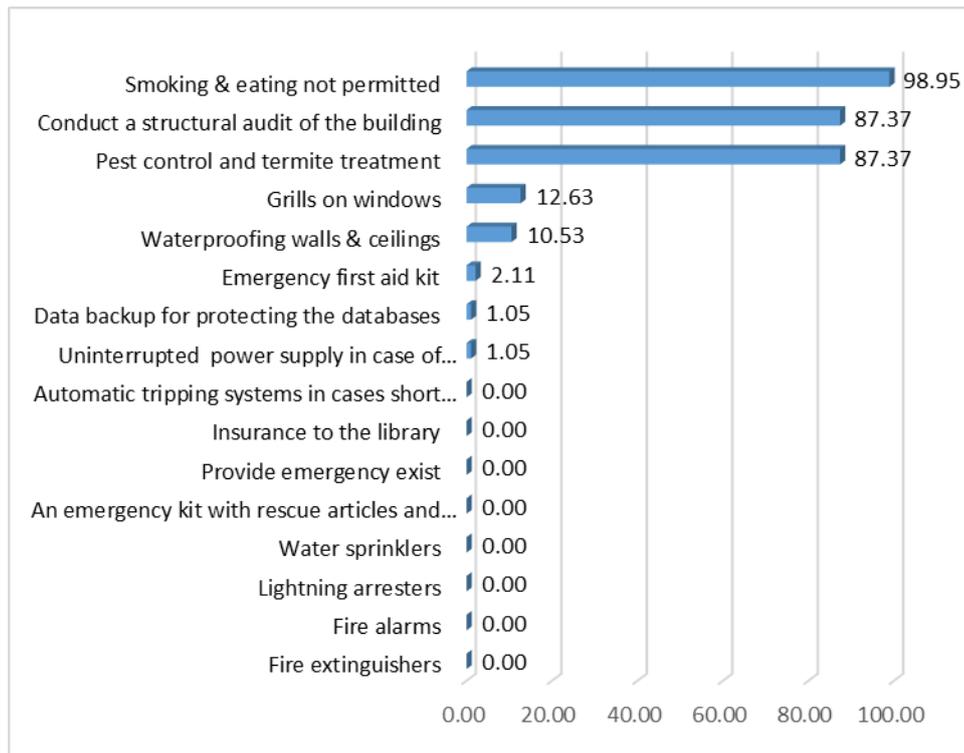


Figure 1 Measure Taken for Preventing Disaster in Libraries

From the above figure, it can be seen that significance level of Kolmogorov-Smirnov Z is less than 0.005, which indicates that there is a significant difference in the frequency of measures taken for preventing disaster in the libraries. The figure shows that 98.95 of smoking and eating not permitted in libraries. At the same time, Whereas automatic tripping system, insurance to the library, provide emergency exist, an emergency kit with rescue articles, water sprinklers, lightning arresters, fire alarms, and fire extinguishers is 0.00%. By the Kolmogorov-Smirnov Z test is 0.00.

6. Discussion

The main purpose of the study was intended to investigate flood-affected Public libraries of south Kerala. The 2018-19 floods made huge destruction in the libraries of South Kerala. Almost 60-80% flood affected 85.26% of the libraries. The 2018-19 Flood has not affected the libraries in Thiruvananthapuram and Kollam. Libraries in Alapuzha were highly affected by 2018-19 floods (48.42%) and libraries in Kottayam were slightly affected by the flood (18.95%). A library that was affected by the flood was completely destroyed. Libraries in rural areas were most affected by the flood and the libraries situated in residential areas were most affected. The old libraries which were built 45-54 years ago were mostly affected by a flood.

7. Conclusion

The analytic study on how much the 2018-19 floods have affected the public libraries of South Kerala. The major objective of this analysis is to study how much the 2018-19 floods have affected the libraries and the measures taken by the libraries to overcome the flood. Libraries in Alapuzha district faced the most destruction by the 2018-19 floods. Most of the libraries were fully or partially destroyed. Majority of the libraries are in poor condition with a 0% chance to survive another flood. There are no modern methods to prevent a disaster in any libraries. As the 2018-19 floods were unexpected; libraries took some efforts to overcome the 2019 flood. Still, the staff didn't receive any training or planning to act when hit a disaster.

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