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'Dare-to-Disown?' Students' Perceptions of Disaster Management at a State University: A Case Study of a Selected Library, Masvingo Province, Zimbabwe

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Abstract:

The study sought to establish and analyse university students' perceptions of potential risk of disasters facing state university libraries in Zimbabwe and related disaster intervention strategies. The study was prompted by media and research reports of library disasters that have occurred recently locally and regionally. The Chaos Theory Framework by Frederick (1998) which underpinned the study, is premised on the unpredictability of nature, the resultant chaos and the lesson to expect the unexpected. Literature related to the threats faced by state University libraries was reviewed. The study adopted a case study design to collect data, from a purposive sample of thirty-two students, using questionnaires and semi-structured interview schedules. Qualitative data analysis was done using inferential statistics and Microsoft Excel tools. The findings established that the students identified potential risk and perceived that the university under study was ill-prepared to manage library disasters since it lacked enough basic equipment such as fire- extinguishers, marked exit points, less knowledgeable students, as a resource towards effective disaster preparedness and management of library disasters. The study recommends an overhaul of attitudes by management towards library disaster management by developing a localised disaster management policy, with adequate funding being made available for implementing risk reduction strategies, including the education and training of students and library staff. The suggested risk reduction interventions also targeted infrastructure development in such areas as ventilation, lighting, repairs and maintenance of electricity supply points to computer equipment as well as the strategic positioning of firefighting equipment.

Keywords: Disaster, disaster management, perceptions, library, case study, strategy, risk

1. Background of the Study

One of the major policy changes after Zimbabwe became independent in 1980 was to increase the percentage of blacks enrolled at the institution and also to widen access to higher education in general for the formerly racially discriminated black majority (Shizha & Kariwo, 2011). Several universities were established but all with scarce library facilities due to the prevailing socio- economic environment. University libraries in Zimbabwe developed from humble beginnings that were characterized by meager resources (Mabuto and Tendai, 2015). For example, the facilities at the selected university, as at 2012, the university was already overburdened with 4000 students (Prospectus, 2012) and at the time of the study, the university had close to 15 000 students (Prospectus, 2016). Fortunately, some major policy decisions and improvements had been made along the way, such as the multi-campus library with its own library facilities. Nonetheless, the student ratio and the facilities on the ground need to conform to the required standards set by the universities regulatory agency, the Zimbabwe Council for Higher Education (ZIMCHE). For example, the basis for accreditation by ZIMCHE clearly stipulates that the university must be able to provide adequate and quality library and equipment facilities. (ZIMCHE Act 1/2006).

According to Alegbeleye (1999) librarians, particularly in Africa, are skeptical about the importance of disaster management in public libraries; due to a myth that disaster management should be the concern of legal deposit, collections, archives and research and special libraries rather than public libraries. Buchanan (2002) observed with concern, that librarians often overlook disaster preparedness on the perception that Africa is not prone to library disasters like in America and Europe. The myth is aggravated by the fact that not much has been documented on the occurrence of library disasters in Africa (Kingori & Otike, 2011), hence the motivation for this current study. However (Kingori & Otike, 2011), proceed to raise an important observation, that disasters are real and they are different from region to region, hence the contribution of this research on the context of Zimbabwe.

1.1. Research Aim

The aim of this study was to identify and analyse students' perceptions of disaster management at a selected state university, with a view that informs and influences reforms in Zimbabwe.

1.2. Research Questions

The research sub-questions to be addressed were:

- How do students define 'disaster management' in the context of libraries?
- What are the students' perceptions of disaster management about the selected state university library?
- What do students perceive to be the suggestions for mitigating library disasters?

1.3. Significance of the Study

The findings of this study were intended to lead to policy change that would promote disaster preparedness and management at university libraries. It was also hoped that university management, staff and students would become aware of risk at libraries and how to manage any eventuality in a non- chaotic manner. The study was also primed to secure library resources and the continued use of library resources for the benefit of the present and future generations, than to lose these prized possessions to preventable disasters, whose severity could have either been foreseen, reduced or totally avoided. It was hoped that the study would raise the awareness of library management, students and staff of the selected university and others in Zimbabwe that might not have done so, about the need for essential pre-disaster plans that included education and training, monitoring and evaluation of library environments. The study might also motivate students and researchers to embark on library disaster management research, thereby contribute to modern disaster research, leading to improved policy implementation by state universities in Zimbabwe.

1.4. Theoretical Framework

The theory that guided this study is the Chaos Theory Framework by Frederick (1998), who defines the chaos theory as the study of a group of connected things that are very sensitive so that small changes in conditions affect them very much. This theory has enriched many areas of inquiry thereby expanding the applications of the systems perspectives to the non-linear operation of large, complex systems. Chaos theory is embodied into three categories which are; extreme sensitivity to initial condition, cause and effect that are not proportional and nonlinear. The Chaos theory views disaster generally as a chaos because it comes with destruction and confusion no matter the form. Because of that condition or situation, there is that tendency for some academic libraries not to adhere to their disaster management plans in all the three phases of a disaster, namely, during the pre-disaster, during the disaster and post- disaster phases. Chaos theory provides useful management insights for disaster organizations towards responding disasters of all magnitudes, from a major disaster over an extended geographical area such as a country, state, city or even to an organization such as an academic library. Major disasters have a low probability of occurring but when they do occur, they have devastating consequences. Hence the validity of the chaos theory to this study for arousing foresight to real danger that needs to be managed without causing further chaos.

2. Literature Review

2.1. Conceptualizing 'Disaster'

Admittedly, a consensual definition of disaster is elusive and many definitions abound due to varying socio-economic perspectives that constitute disaster (Perry & Quarantelli (2005). The word 'disaster' can be traced to the Latin word 'desastre". The word is the combination of two Latin words - 'Dis' and 'Astro', while 'astro' means a bad star, thereby linking the mythology of planets to the causes of disasters (Quarantelli, 1987). A general view of a disaster is that of a sudden and calamitous incident that disturbs the peace of a community and may even endanger lives and destroy property. Perry (2015) points out that there are many perspectives of disasters based on the dimensions, hence this study focuses on library disasters, also called 'risks'.

In fact, academics do accede to the lack of consensual definition of disaster, which they attribute to the nature of the phenomena, which is 'boundary-less' (Sina & Srivastava, 2015), leading to an excess of a hundred definitions (Perry, 2017). This study views disaster as similarly perceived by McFarlane & Norris (2006), that a disaster is a potentially traumatic event that is collectively experienced, has an acute onset, and is time-delimited. As such, disasters may be attributed to natural, technological, or human causes. The definition bodes well with the study by helping the study to focus on the causes and consequently on disaster management strategies related libraries.

2.2. Conceptualizing Disaster Management in Libraries

Having established that a disaster is a sudden accident or a natural catastrophe that causes damage to property and or loss of life (McFarlane & Norris, 2006), university libraries are also prone to risk. Anderson (2015) states that disasters that affect libraries are usually an unexpected event with destruction consequences requiring swift action to reduce damage to academic property and infrastructure. Accordingly, Harrison (2016) advises that disaster management in library and information centers involves the adoption of a disaster plan, which comprises a set of guidelines and action plans which are constantly rehearsed in order to stop or reduce the magnitude of a disaster. Instituting such a plan requires an understanding of the sources of the threats to the libraries, also called potential risks. The selected institution's

library was the target for such an enquiry in order to establish the status of preparedness or lack of it from the lens of student patrons.

2.3. Types of Threats to Libraries

According to the United Nations Report (2008) disasters are categorized as either man - made or natural disasters. The characteristics of the threats are discussed below.

2.3.1. Natural Disasters

Bogler (2003) states that natural disasters are disasters whose cause are beyond the control of human beings. They are caused by natural phenomenon, such as, earthquakes, volcanic eruptions, flooding, hurricanes, typhoons and lightning. According to Ngulube (2005) these types of disasters mainly occur in America, Europe and Asia and rarely in Africa. Ngulube (2005) further states that these types of disasters are called geographic and climatic hazards and have destroyed libraries and their collections.

2.3.2 Man- Made Disasters

Kaur (2009) posits that man-made disasters occur as a result of human negligence and other intentions. Man-made disasters result from failings of humans and these include war, fire, water leakages and theft. Johnson (2005) states that these disasters can also be caused by industrial accidents such as nuclear or chemical spills, technological disasters such as viruses, computer failure, electrical faults and criminal behaviours, such as terrorist acts, theft and arsons. As can be deduced, the list is not exhaustive and in a dynamic and globalised socio- economic environment, different regions and library environments are susceptible to 'new' threats. Here the researchers suggest that the computer-generated viruses, as examples of modern library disasters, should be prioritised because they have profound implications to students by crippling institutional repositories and networks.

2.4. Strategies for Effective Disaster Management in University Libraries

Khan (2003) opined that training of staff is the key to disaster preparedness because this human resource then develops an awareness of the need to protect documents from disasters; are equipped with prevention skills; are able to conduct risk assessment, can develop disaster preparedness plans; adhere to safety regulations during salvage operations, prioritise salvaging of collections and can deal with media strategically during and after the disaster. Alegbeleye in Ngulube and Magazi (2006) also recommend the need to train all the staff members on general disaster response strategies. In truth, managing disaster is a team task that should ensure that lives are saved. The researchers are persuaded to support institutions that educate and train students as well.

The following strategies have also been suggested by Long (2006): the development of a disaster preparedness plan as well as conducting vulnerability analysis and risk assessment while Diamond (2006) looks at the basics of disaster management and argues that libraries should provide emergency numbers on the notice board to allow people to contact relevant authorities in times of disaster. Indeed, the idea seems simple for every institution to implement and with the rise in access to mobile phones and other forms of communication technology, much could be achieved. A recent study published in the Journal of Emergency Medicine has found that more people are more likely to be saved through mobile phoning than through the landline because of the speed of making the call alerts (Australian Mobile Telecommunications Association, 2018). There are also other strategies such as proper library orientation; regular cleaning of the library and regular fumigation of the library, that may appear to be insignificant but are vital, too (Knuth, 2006). In addition, an academic library that has the plan would be able to handle disaster since procedures to prevent and prepare for disasters and those proposed to respond to and recover from disasters, are described. The responsibility for rehearsing and performing these tasks, and evaluating them periodically rests with a carefully selected disaster management team (Lyall (1996). Resourcing the teams fully, gives the team the confidence to get the results.

2.5. Barriers to Disaster Management in Libraries

Muir & Shenton (2002) identified that some libraries lacked adequate facilities to deal with disaster as most libraries operated on a low scale. Reidlmayer (2007) gives the example of most materials damaged during the war in Croatia, which could not be recovered due to lack of facilities and equipment. Buchanan (2000), on a study on all university libraries in South-East Nigeria, recorded high cases of mutilation, arson and theft of books due to lack of a security system. In another study carried out at the University of Kwazulu Natal South Africa, Ngulube (2005) noted the lack of security personnel to stop rioting students that vandalized property and equipment. Ngulube & Mungazi (2006) then stressed the need to have adequate facilities and equipment such as fire and smoke detectors, fire extinguishers, adequate exit points, good drainage system and conducting regular building assessment. Thus, the researchers observed that university management has a role to play if they want to secure their libraries from damages.

Suleimane (2009) argues that most governments and organization put disaster management at the bottom of the priority list. He further stressed that universities are comfortable in other projects than to purchase equipment that is useful for the library and its users. In another study with similar findings, Eden & Mathews (1997) found out that in Nigerian universities, 70% of libraries in the country had obsolete fire extinguishers and air conditioners. They state that these institutions were sitting on non -functional equipment which were not serviced or tested. McMichael (2007) posits that libraries should focus on meeting the stipulated library standards and ensure that facilities and library personal are

fully appraised on disaster management. Library management in Zimbabwe has ZIMCHE (2006) guidelines to back them in the implementation of disaster preparedness plans but the compliant rates may vary.

3. Research Methodology

Based on an interpretivist paradigm, this search for an in-depth understanding of participants' perceptions was facilitated by the following research approach and research tools.

3.1. Research Design

Thomas (2013) defines a research design as a research plan. As such, a research design would provide a coherent approach to conducting the study where the choice of steps and their sequencing allows for a clear process in which the relationship of the constituent parts is both discernable and logical. Using a qualitative research design, a descriptive survey method facilitated the gathering of qualitative data from a reasonably sized cross section of library users. This was achieved in a highly economic way, in terms of time spent by researchers, since, based on experience, self- administered questionnaires create less activity for the researchers, while affording the participant the ample time to read, analyse and write their responses down. Combined with the use of small-scale interviews, the qualitative design examined the perceptions of the chosen sample of students in a variety of ways and in detail, Cohen, et, al (2011).

3.2. Research Approach

The study opted for a qualitative approach, with advice from Creswell (2007) that approach is suitable for conducting research in a natural setting. In this study, it was important to understand the knowledge and perceptions of library patrons, the students on library disaster management. The approach is supported by Mugweni (2012) as a process that facilitates in- depth understanding of a phenomenon as participants submit their views without fear or favour. The data were then interpreted accordingly.

3.3. Sample and Sampling Technique

The basic idea of sampling was that of selecting some study units from a population to enable the research to draw conclusions about the entire population (Cohen, et, al; 2008, Creswell, 2011). Among the compelling reasons for sampling, was a lower cost and reduced time of doing the research, greater accuracy of results and greater speed of data collection. (Cohen, et, al, 2011). From a population of an average of 300 patrons who visit the library daily, the purposive sampling technique was used to raise the thirty-two (32), study units. The sampling technique was use to select participants who were known to frequent the library and were in the second year of study and above. It was anticipated that such participants were familiar with the selected university library's environment and safety processes.

3.4. Data Collection

3.4.1. Data Collection Techniques

The study used structured questionnaires with open- ended questions as well as the use of semi- structured interview schedules to collect data from participants. The sample comprised thirty-two-(32) participants of whom sixteen (16) students responded to the questionnaires while another sixteen (16) were interviewed. The use of more than a single data collection technique enabled data triangulation. Heale & Forbes (2013) posit that triangulation increases confidence in the findings. This study benefitted immensely from combining the findings from the two techniques in order to gain an in-depth insight of the phenomenon.

3.4.2. Reliability and Validity

According to Bryman (2012) reliability refers to the consistency of the research instruments while validity is a measure of how close the instrument can solicit data that is close to the construct under study (Punch, 2005). In this study, the instruments were pre- tested for internal consistency and validation. Tests of validity provide an estimate of how accurately the data obtained in a study represents a given variable of the study (Mugenda, 2004). In this study, the main variables were students' perceptions of disaster management. To guarantee validity of the findings, the data were collected from a purposive sample of rich informants.

3.5. Data Analysis

According to Cohen, (2008) data analysis enables the researcher to make sound conclusions. The qualitative data were firstly presented in tables and then described. The researchers employed the Miles and Huberman's (1984) typology of qualitative data analysis known as transcendental realism (Punch, 2005), from which some themes emerged for further analysis and interpretation of the perceptions on the disaster management phenomenon at the selected state university.

3.6. Ethical Considerations.

Aware that the qualitative study involved human elements, the following are some of the steps that were followed in order to protect and promote the human rights and dignity of the participants; a) protecting participants' personal information through a confidentiality agreement entered with the participants; b) providing participants with the freedom to use hidden names, in order to guarantee anonymity of participants; c) written informed consent so that

participants were aware that they could choose to respond to the survey questions, freely, without duress and unfavorable consequences ((Bryman, 2012; Punch, 2005).

4. Findings, Analysis and Discussion

The findings of the study were presented using qualitative descriptions and tables before they were analysed and discussed. Attributes and later, the participants' perceptions of the concept of disaster management and the related disaster management issues

4.1. Participants' Attributes

The findings showed that the majority of the participants were in the final stages of their degree programmes and were frequent users of the state university library. In fact, 7 (21.87%) participants were in their second year, 16 (50,00%) participants were in the third year and those in the fourth year of their studies were 6 (18.75%) while 3 (9.37%) were in the first year of study. The participants were largely a rich source of information based on their experience and exposure to the library environment.

The correlation of the data relating to library use was as follows: 19 (59.37%) of the participants often used the library since they claimed to visit the library on an average of five days in a week, 6 (18.75%) of the participants indicated that they frequented the library for an average of four days in a week, while 7 participants (21.87%) were not regular users. These results validated the findings by Mabuto & Tendayi (2015), that most students at this state university viewed the library as a valuable resource in their studies. Hence, participants with such attributes were expected to be familiar with disaster management and preparedness issues of the state university library. Such frequent library users were likely to contribute reliable data for this study. These attributes provided the confidence that the data were both valid and reliable, based on estimates of accuracy (Mugenda, 2004).

4.2. Participants' Responses on Disaster Management at the State University

4.2.1. Conceptualizing Disaster Management.

The participants were asked to define the concept of disaster management in relation to library management after which the responses were grouped into themes, based on similarities. Theme construction leads to insights of meanings as part of the interpretive process of understanding of participants (Vaismoradi, Jones, Turunene & Snelgrove, 2006).

Theme	Number of Participants (%)		
Planning to deal with disaster	9 (28.12)		
Having a policy to manage disaster	4 (12.50)		
Creating safe library	6 (18.75)		
Security of library	6 (18.75)		
Not sure	7 (21.87))		
Total	32 (100%)		

Table 2: Participants' Conceptions of Disaster Management N-32

Table 2, above, showed that twenty- five (78.13 %) of the participants perceived disaster management as a science of managing the safety of the library, while seven participants (21.87%), professed ignorance on the concept. The accurate responses contained aspects of disaster management such as: general management in library and information centres which involves the adoption of a disaster plan, comprising a set of guidelines and action plans, which are constantly rehearsed in order to stop or reduce the magnitude of a disaster ((McFarlane & Norris, 2006; Harrison, 2016). The findings revealed that the sample could be trusted to respond objectively to the upcoming issues on disaster management.

Next, the participants were asked to rate their perceptions of disaster management practice at the selected university library. They were asked to rate their perceptions on a 5-Point Likert scale: SA (Strongly Agree); A (Agree) N (Neutral); D (Disagree); SD (Strongly Disagree).

ITEM	SA (%)	A (%)	N (%)	D (%)	SD (%)	Total
1.Adequate Fire	2 (06.25)	2 (06.25.)	3 (09.38)	14 (43.75)	11 (34.37)	32 (100%)
extinguishers						
2.Adequate Exit points	4 (12.50)	8 (25.00)	2 (06.25)	12 (37.50)	6 (18.75)	32 (100%)
3. Adequate	0 (00.00)	2 (06.25)	6 (18.75)	12 (37.50)	12 (37.50)	32 (100%)
ventilation						
5.Adequate sitting	6 (18.75)	9 (28.12)	2 (06.25)	10 (31.25)	5 (15.63)	32 (100%)
6. Possible Risk of fire	5 (15.62)	4 (12.50)	12 (37.50)	9 (28.13)	2 (06.25)	32 (100%)
7. Possible Risk from	4 (12.50)	6 (18.75)	2 (06.25)	10 (31.25)	10 (31.25)	32 (100%)
rain/water						
8. Possible Risk from	2 (06.25)	3 (09.38)	6 (18.75)	11 (34.37)	10 (31.25)	32 (100%)
pests						
9. Possible Risk from	6 (18.75)	12 (37.50)	5 (15.63)	6 (18.75)	3 (09.37)	32 (100%)
theft						

Table 3: Participants' Rating of Perceptions of the State of Disaster

Management at the Selected University

N=32

Table 3, above, summarizes the data that were collected from the participants. The first column contains the statements of the perceptions about disaster management that the researchers generated from the literature. The second to the sixth column represented the ratings, by number and percentage while the seventh column is a summary of participants' total number of responses that were observed for each item that was on the instrument and the percentage that each cell contributes towards the total frequency is provided in brackets. The ratings were based on a Likert scale that ranged from 'Strongly Agree (SA) to Strongly Disagree (SD), thereby showing either the level of one's agreement or disagreement with the factor.

The data in Table 3, above, revealed that out of the nine (9) perceptions that were listed as potential sources of risk, the state university received negative ratings in five (5) areas and positive ratings on three (3) areas of the nine areas that were on the research instrument, while there was 50-50 split decision in one area, namely on the sitting capacity. The participants were asked to comment and to suggest possible solutions. These were captured in Table 4.

The findings revealed the ratings that were done on the potential risks as follows: lack of emergency numbers (81.25%); inadequate fire extinguishers (78.12%); inadequate ventilation (75%) and inadequate exit points (56.25%) and risk from theft was considered a calamity by 56.25% of the participants. The interrelatedness in the three of the 5 areas that posed the greatest danger, adds to the reliability and validity of the results. For example, in the event of a disaster, a preparedness plan would mean that emergency numbers will be needed to get help, while some of the danger might be mitigated using fire extinguishers and simultaneously, library patrons will be evacuated through marked emergency exit points.

Although there are two types of disasters which are categorized as either natural or man-made (United Nations Report, 2008) the participants perceived that man-made disasters posed the greatest risk to the students at the selected state university library than natural disasters. Kaur (2009) posits that man-made disasters occur as a result of human negligence and other intentions. In which case, these risks are quite predicable and the likelihood of preventability is high.

Next, the study solicited the interventions that could be implemented.

Question: What suggestions do you have on ways of reducing the risk of disasters in the library?

The open-ended question proved a source of rich data of practical solutions for mitigating risks to the library. The themes and the ratings are shown in Table 4, below.

Theme	Number (%)	Findings/ Comments
Education and training	13 (40.62)	Areas that were specified were e.g. use of fire
		extinguishers, emergency exists and
		familiarization with potential risks and how to
		manage risk
Operating emergency exits	10 (31.25)	Evacuation is not only about opening emergency
		exits, but implies following a procedure or drill
Repairs and maintenance	4 (12.50)	Repairs were suggested to e.g. electricity sockets,
		roof and water tapes. Internet access to laptops
		now very limited.
Trained library staff	2 (06.25)	The participants perceived that when disaster
		struck, trained library staff would e.g. assist them
		to evacuate and reduce the damage
No suggestion	3 (09.37)	These participants did not suggest anything.

Table 4: Participants' Suggestions on Mitigating the Risks N=32

Table 4 above, shows the frequencies for each of the themes on mitigating library risks. The need for education and training of patrons became the most popular suggestion from 13 participants (40.62%), followed by the need to learn to operate emergency exit doors (31.25%). There were suggestions for management to carry out repairs and for the training of staff. Although training library staff was perceived to be important by only two participants (06.25%) Alegbeleye in Ngulube & Magazi (2006) recommend the training of all the staff members on general disaster response strategies because managing disaster is a team effort.

5. Summary, Conclusion and Recommendations

Based on literature that was reviewed which was then compared with the responses, most of the students, twenty-five participants (78.13%), understood the concept of disaster management; that disaster management referred to either planning to deal with disaster; having a policy to manage disaster; creating safe library or security of library. As such the entire data that were collected could be relied upon as having been obtained from informed sources.

With regards to participants' perceptions of disaster management at the selected state university, the findings showed that areas of potential risk were (in order of perceived potential risk): lack of emergency numbers (81.25%); inadequate fire extinguishers (78.12%); inadequate ventilation (75%) and inadequate exit points (56.25%) and risk from theft was considered a calamity by 56.25% of the participants. The risk of man-made calamity was perceived to be real.

Suggestions for mitigating disasters were: Education and training by 13 participants (40.62%); operating emergency exits by 10 participants (31.25%); repairs and maintenance by 4 participants (12.50%) and trained library staff2 participants (06.25%). The findings revealed that it was possible to avert the imminent risk at the selected state university library by taking direct action.

In conclusion, the sampled participants showed a fairly clear understanding of the disaster management concept and provided valid and reliable responses to the rest of the research questions which were directly linked to this core concept. The participants' frequent use of the library resources was also regarded to have endowed the participants with rich information, founded on sound experience of the library environment. As such, their perceptions of risk and the level of disaster preparedness that revealed a gap in knowledge and practice could be generalized to the state institution's other campuses.

Based on these findings, the research recommends a proactive library management team that will design a disaster management policy and ensure that such a policy is implemented, monitored and evaluated, periodically. The policy process needs to be transparent and to conform to a 'consultative imperative' model (Najam, 1995), encompassing management, staff and students. The paper closes with the rhetorical question that underpinned the research study: Dare to disown?

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