POLARIS GLOBAL JOURNAL OF SCHOLARLY RESEARCH AND TRENDS

Research Article

Disaster risk reduction management capabilities of State Universities and Colleges (SUCs) and local government units in Iloilo: Basis for program development

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ARTICLEINFO

Received
7/11/2022
Revised
8/17/2022
Accepted
9/21/2022

KEYWORDS
DRRM, Universities, Colleges, LGU

ABSTRACT

This research was conducted to determine the disaster risk reduction management capabilities of the State Universities and Colleges and Local Government Units in the Province of Iloilo and formulate a development program based on the result. A total of 160 respondents were involved in this study. In gathering the needed data, a valid and reliable researcher-made instrument in the form of a questionnaire checklist was utilized considering all the variables included in the study. The data gathered were analyzed using the mean, the-Kruskal Wallis and Mann-Whitney set at a .05 alpha level of significance. The findings revealed that the disaster preparedness, disaster response, prevention and mitigation, and rehabilitation and recovery of the four State Universities and Colleges as a whole and classified as an institution was "very satisfactory" while the Local Government Units as a whole and classified as to location was "excellent." Significant differences existed in the disaster preparedness, disaster response, prevention, mitigation and rehabilitation and recovery capability levels of the SUCs classified as institutions and LGUs classified as to location. The State Universities and Colleges and Local Government Units' capability levels in disaster preparedness and disaster response were significantly different while no significant differences in prevention and mitigation and rehabilitation and recovery were found. The challenges encountered by residents during disasters were inadequate.

How to cite:
Perez, J.D. & Batisla-ong, S.N. (2022). Disaster risk reduction management capabilities of State Universities and Colleges (SUCs) and local government units in Iloilo: Basis for program development. *Polaris Global Journal of Scholarly Research and Trends*, 1(1), 97-115.

INTRODUCTION

The value people give to education cannot be overstated. Through the years, educators have been doing their best to come up with quality education suited to the needs and aspirations of the Filipino people. It is through education that people acquire the knowledge, attitudes, and skills they need to enable them to cope with the rapid changes and challenges of our society.

The State Universities and Colleges (SUCs) as institutions of higher learning are faced with the responsibility to prepare future professionals to be ready for the world of work and be responsive to the needs of the time. The school as a learning laboratory must expose the students to the real scenario and provide them with appropriate training to be responsive to societal challenges.

Disasters and emergencies affecting large areas and many people can either develop quickly or build up periods that allow more time for the adaptation and implementation of protective measures (Ondiz, 2009). This occurs when natural and technological hazards have an adverse impact on human beings, properties, and economic, social, and natural resources. The disastrous effects of calamities like earthquakes, floods, and typhoons in Visayas regions are so alarming that the academe must be proactive to reduce risk and be of help to the community. The enactment of Republic Act 10121 known as the Philippine Risk Reduction and Management Act of 2010 has laid the basis for a paradigm shift from just disaster preparedness and response to disaster risk reduction and management (DRRM Plan, 2010). The Yolanda disaster also exposed the low level of disaster preparedness and response capabilities of many Local Government Units (DRRM Plan 2010). As molders of the future professionals who are expected to actively participate in times of disaster are the higher education institutions capable of doing this task? No study has been conducted on the disaster risk management capabilities of State Universities and in Iloilo, thus this study.

METHODS

Design

A descriptive research design was used in this study which determined the level of disaster risk management capabilities of four State Universities and Colleges in Iloilo. This design allows the description of the existing phenomenon and comparison of phenomena among categories of given variables. It is considered appropriate for this study (Calmorin, 2016). Furthermore, descriptive research describes a given state of affairs as fully and carefully as possible (Fraenkel & Wallen, 2013). It is useful in summarizing the characteristics of individuals or groups. This method is of large value in providing facts on which professional judgments may be based. A quantitative method of research was employed in this study. It is employed when the objective of the study is answerable by numeric terms or uses numerical data.

Study Locale

The study was conducted at the four State Universities and Colleges in the province of Iloilo, namely: Iloilo Science and Technology University (ISATU) in Iloilo City, Iloilo State College of Fisheries (ISCOF) in Barotac Nuevo, Northern Iloilo Polytechnic State College (NIPSC) in Estancia, and West Visayas State University (WVSU) in Pototan. The four tertiary institutions covered in the study were composed of two universities and two colleges located in the different congressional districts of Iloilo, such as the third district, fourth district, and fifth district.

Respondents and Sampling Technique

The respondents of the study were 20 faculty members, staff, and students of each sample school. The non-probability sampling was employed in the selection of the 20 respondents per institution. Quota sampling was utilized in selecting the respondents for the study. They were knowledgeable sources because the researcher assumed that they could give objective and accurate data needed in the study. The respondents chosen were members of the Disaster Risk Reduction Management Unit/Council.

Instrument

The instrument used in this study was adopted from the National Risk Reduction Disaster Management Plan (2010). The research instrument is divided into two parts. Part 1 reflects the name of the institution and location/Local Government Unit. Part II is the questionnaire checklist on the Disaster Risk Reduction Management capabilities in terms of disaster preparedness, disaster response, prevention, mitigation and rehabilitation, and recovery, with 10 statements per area and five options. The respondents checked the columns that correspond to their answers as indicated in the descriptive scale with the corresponding weight: 5- Always/Excellent, 4- Very Often/Very Satisfactory, 3- Often/Satisfactory, 2- Sometimes/Fair, 1- Never/Poor. "Excellent" means that the respondents believed that the criteria and a substantial number of good practices were fully met at a level that provides a model for others. "Very satisfactory" means that the respondents believed that the criteria are fully met in all respects, at a level that demonstrates good practice. "Satisfactory" means that the respondents believed that the criteria is met in all respects. "Fair means that the respondents believed that the criteria are met in most respects, but some improvement is needed to overcome weaknesses. "Poor" means that the respondents believed that the criteria are met minimally in some respects, but much improvement is needed to overcome weaknesses.

Validity

The validity of the research instrument was done by submitting to eight jurors who are experts in the areas of disaster risk reduction and management, Statistics, communication, and research. The jurors rated the content validity of the said instrument using the Eight Criteria of Good and Scates. All the suggestions of the eight experts were incorporated during the revision of the research instrument.

Reliability

The revised research instrument was pretested to the 30 students of the two campuses of the Iloilo State College of Fisheries-Dingle and San Enrique. A parallel form of research instruments (Set A and B) was prepared. The set A research instrument was administered and after 30 minutes set B was also administered. The results of the two sets were subjected to Pearson r to determine their reliability. The result of Pearson r was 0.846 which means very reliable. Enough copies of the research instrument were reproduced for data gathering.

Data Collection

The researcher sought permission to conduct the study from the President of the Iloilo Science and Technology University, Iloilo State College of Fisheries, Northern Iloilo Polytechnic State College, and the Campus Administrator of the West Visayas State University Pototan Campus. The researcher administered the instrument personally and checked the accomplished instrument as to its completeness. The data collected were recorded, statistically processed, analyzed, and interpreted.

Data Analysis

In the analysis of data, descriptive and inferential statistical tests were employed in the study. The descriptive statistical tests applied were frequency and mean. *Frequency*. This was utilized in determining the number of respondents per level based on the mean scale. *Mean*. The mean was used as the basis for the interpretation of data gathered for the Disaster Risk Reduction Management Capability level in disaster preparedness, disaster response, prevention and mitigation, and rehabilitation and recovery. As to the inferential statistical tests, Kruskall-Wallis and Mann-Whitney tests were applied. *Kruskall Wallis*. This was utilized in determining the differences in the four areas of Disaster Risk Reduction Management capability level among the four institutions. *Mann Whitney*. This was employed in finding out differences in the four areas of Disaster Risk Reduction Management capability level between the State Universities and Colleges. In determining the capability level in terms of disaster preparedness, disaster response, prevention, mitigation, and rehabilitation and recovery, the responses were interpreted as follows: All the gathered data were computer processed using the Statistical Package for Social Sciences (SPSS) software. In rejecting or accepting the null hypothesis, a significance value of <.01 was declared highly significant (**) and <.05 was declared as significant (*).

RESULTS AND DISCUSSION

Disaster Risk Reduction Management (DRRM) Capability Level of the State Universities and Colleges in terms of Disaster Preparedness as an Entire Group.

Table 2 presents the disaster risk reduction management capability level in terms of disaster preparedness of the State Universities and Colleges as a whole group. State Universities and Colleges. In the assessment of the four state universities and colleges covered in this study as to disaster preparedness, ten statements were used and the result revealed that only three statements were rated “excellent” by the respondents on the aspect that the school provides telephone numbers of emergency and support agencies (M=4.24), provides first aid kit for the stakeholders to know first-aid procedures (M=4.24) and develops awareness among students/residents on various hazards that affect the community (M=4.20). The three statements with lower ratings and described as “very satisfactory” were on the aspects that the school makes a list of buildings to be used as shelters for evacuees in case of disaster (M=3.99), takes an active role in school/community emergency response (M=3.98) and posts maps and floor plans in designated areas (M=3.79). The overall mean is 4.06 interpreted as “very satisfactory”. The results show that the state universities and colleges were “excellent” in providing telephone numbers of emergency and support agencies (e.g. fire departments, hospitals radio and television stations etc.) while “very satisfactory” in posting the maps and floor plans in designated areas. In the overall rating, the four institutions obtained a “very satisfactory” rating.

Table 1. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster preparedness as an entire group

Statement	SUC	
	Mean	Description
DRRM plan provides specific directions for immediate action, enough preparation to allow for adjustments and changes of an unexpected situations.	4.09	Very Satisfactory
DRRM plan adheres to standard procedure for a particular emergency response.	4.03	Very Satisfactory

Office provides telephone numbers of emergency and support agencies (e.g. fire departments, hospitals radio and television stations etc.)	4.24	Excellent
Posts maps and floor plans in designated areas.	3.79	Very Satisfactory
Provides an emergency warning system for informing the school population of the actual or impending danger.	4.00	Very Satisfactory
Prepares a first aid kit for the stakeholders to know first-aid procedures.	4.24	Excellent
Makes a list of buildings to be used as shelters for evacuees in case of a community disaster.	3.99	Very Satisfactory
Administration develops awareness among students/residents on various hazards that affect the community.	4.20	Excellent
Administration organizes activities to promote safety awareness.	4.09	Very Satisfactory
Takes an active role in school/community emergency response and assumes a variety of tasks and conducts proper emergency response training.	3.98	Very Satisfactory
Grand Mean	4.06	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

The SUCs personnel assigned to manage the disaster risk reduction were faculty handling the National Service Training Program (NSTP) subjects and augmented by the officers from different student organizations whose training is not as rigid. The students involve graduates after four years and another set is trained again resulting in a less competent and unstable force. Furthermore, the institutions' "excellent" ratings could be credited to the unit where there is regular personnel to do the specific task and are more ready during the disaster.

Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster preparedness when classified as to the institution

Table 2 presents the disaster risk reduction management (DRRM) capability level of the State Universities and Colleges in terms of disaster preparedness when classified as an institution. Institution. The data from the four schools covered in the study revealed that school D (M=4.41) got an "excellent" rating, followed by school C (M=4.11) with a "very satisfactory" rating then school A (M=4.04) with "very satisfactory" rating and school B (M=3.70) also with "very satisfactory" rating. The grand mean is 4.06 which means a "very satisfactory" capability level for disaster preparedness. The findings revealed that the preparations in times of disaster of the four institutions were not the same since only school D was rated "excellent" while the rest were rated "very satisfactory".

Table 2. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster preparedness when classified as to institution and location

Classification	Mean	Description
Institution		
A	4.04	Very Satisfactory
B	3.70	Very Satisfactory
C	4.11	Very Satisfactory
D	4.41	Excellent
Grand Mean	4.06	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

On the other hand, the three schools which obtained "very satisfactory" ratings show that the respondents believed that they fully met the criteria in all respects at a level that demonstrates good practice. These schools have manifested only good practices in terms of disaster preparedness but are not ready for adoption.

Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster response as an entire group

The disaster response capability level of the sample institutions as an entire group is presented in Table 3. Institution. The disaster response capability level of the State Universities and Colleges was rated "very satisfactory" (M=4.04) as a whole group. The three statements with higher ratings affirming that the school provides sufficient fire extinguishers in place (M=4.36) having an "excellent" rating, stakeholders were knowledgeable of what to do when disaster strikes (M=4.08) rated as "very satisfactory", and provides emergency communication in place (M=4.08) described as "very satisfactory". The SUCs got lower ratings in aspects of providing pre-arranged signals like sirens or bells (M=3.95) described as "very satisfactory", providing a stable place in assisting disabled persons during emergencies (M=3.94) rated as "very satisfactory" and specifying and identifying assembly points for students during an emergency (M=3.85)assessed as "very satisfactory". The overall mean (M=4.04) is interpreted as "very satisfactory".

Table 3. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster response as an entire group

Statement	SUC	
	Mean	Description
Provides sufficient fire extinguishers in place.	4.36	Excellent
Provides emergency communications in place.	4.08	Very Satisfactory
Provides a stable place in assisting the disabled persons during emergencies.	3.94	Very Satisfactory
Provides telephone availability to ensure immediate report of fires to the Fire Department.	4.04	Very Satisfactory
Clearly indicates and pre-identifies exit routes and evacuation areas.	4.00	Very Satisfactory
Clearly specifies and identifies assemble	3.85	Very Satisfactory

points for students during emergencies.		
Provides a pre-arranged signal such as a siren or bell set off immediately by a person in-charge.	3.95	Very Satisfactory
Provides protocols for student release.	4.03	Very Satisfactory
Conducts proper emergency procedures to be inculcated by students/residents.	4.06	Very Satisfactory
10.Stakeholders are knowledgeable of what to do when disaster strikes.	4.08	Very Satisfactory
Grand Mean	4.04	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

The results further show that the school provides enough fire extinguishers, rated as "excellent" while "very satisfactory" on the specification and identification of assembly points for students during an emergency.

Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster response when classified as to the institution

Table 4 presents the disaster risk reduction management (DRRM) capability level of the State Universities and Colleges in terms of disaster response when classified as to institution and location. Institution. The results of the four schools involved reveal that only school D (M=4.40) got an "excellent" rating, followed by school A (M=4.14) having a "very satisfactory" rating, then school C (M=4.05) with a "very satisfactory" rating and school B (M=3.63) also with "very satisfactory" rating. The grand mean is 4.06 described as "very satisfactory". The overall rating of the disaster risk reduction management capability level in terms of disaster response of the four institutions was lower with a rating of "very satisfactory". The result further shows that the three schools got "very satisfactory" ratings and only one got an "excellent rating".

Table 4. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster response when classified as to institution and location.

Classification	Mean	Description
Institution		
A	4.14	Very Satisfactory
B	3.63	Very Satisfactory
C	4.05	Very Satisfactory
D	4.40	Excellent
Grand Mean	4.06	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

The finding implies that school D with ratings of "excellent" had fully met the criteria and significant number of good practices in terms of disaster response at a level that provides a model for others, while school C is "very satisfactory" ratings had both fully met the criteria in all respects, at a level that proves good practice.

Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of prevention and mitigation as an entire group

Table 5 shows the four State Universities and Colleges disaster risk reduction management capability level in terms of prevention and mitigation as a whole group. The top three statements which were rated higher state that the administration provides leadership for the establishment of a school/community emergency and disaster preparedness committee rated as "excellent" (M=4.28), organizes a committee made up of teachers, administrative personnel, parents, and students rated "very satisfactory" (M=4.18) and places emergency warning system that shall inform the school population of the actual or impending danger rated as "very satisfactory" (M=4.14). The three statements with lower ratings state that the administration provides a school/community plan for early warning in the place rated as "very satisfactory" (M=4.03), enforces laws, policies, or regulations that deal with disaster management rated as "very satisfactory" (M=4.03), and provides procedures for regular maintenance of emergency supplies and equipment such as fire extinguishers, alarms and the like rated "very satisfactory" (M=3.95). The overall rating is "very satisfactory" (M=4.09). The results on the capability level of the respondents in terms of prevention and mitigations show that the school was "excellent" ratings on the administration providing leadership for the establishment of a school emergency and disaster preparedness committee. The statement with the lowest rating for the institution is on the administration provides procedures for regular maintenance of emergency supplies and equipment such as fire extinguishers, alarms, and the like.

Table 5. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of prevention and mitigation as an entire group

Statement	SUC Mean	Description
Administration provides leadership for the establishment of a school/ community emergency and disaster preparedness committee.	4.28	Excellent
Plans, organizes and conducts emergency preparedness training and drills for all students, faculty, staff, and residents including persons with disabilities.	4.08	Very Satisfactory
Places an emergency warning system that shall inform the school population of the actual or impending danger.	4.14	Very Satisfactory
Provides a school/community plan for early warning mechanism in place.	4.03	Very Satisfactory
Undertakes disaster awareness and public information projects or programs to the community.	4.05	Very Satisfactory
Organizes committee made up of teachers, administrative personnel, parents and students/LGU personnel.	4.18	Very Satisfactory
Administration provides procedures for regular maintenance of emergency supplies and equipment such as fire extinguishers, alarms and the like.	3.95	Very Satisfactory

Coordinates and communicates with local authorities (e.g. policies, fire departments, hospitals) and parents or guardians of students in crisis situations.	4.09	Very Satisfactory
Enforces laws, policies, or regulations that deal with disaster management.	4.03	Very Satisfactory
Committee involves the Municipal DRRM officer in the conduct of hazard mapping and rural/ urban planning.	4.08	Very Satisfactory
Grand Mean	4.09	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

This result is expected for the institution since there is no plantilla position for an electrician.

Disaster Risk Reduction Management (DRRM) Capability Level of the State Universities and Colleges (SUCs) in terms of prevention and mitigation when classified as to the institution

Table 6 shows the disaster risk reduction management capability level of the State Universities and Colleges in terms of prevention and mitigation when classified as institutions. The four tertiary schools' prevention and mitigation capability level reveal that the highest rating of "excellent" was obtained by school D (M=4.45), followed by school A (M=4.26) also with an "excellent" rating, then school C (M=4.07) having "very satisfactory" rating and school B (M=3.58) with "very satisfactory" rating. The grand mean is 4.09 interpreted as "very satisfactory". The findings further reveal that school A has the same ratings of "excellent" as well as school D while school C has ratings of "very satisfactory." A "very satisfactory" rating was obtained by school C and capability level in the same place was the same for the institution. The result implies that SUC A as well as SUC D, in terms of prevention and mitigation capability, have fully met the criteria and a substantial number of good practices at a level that provides a model for others, while school C has fully met the criteria in all respects, at a level that demonstrates good practice.

Table 6. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of prevention and mitigation when classified as to institution

Classification	Mean	Description
Institution		
A	4.26	Excellent
B	3.58	Very Satisfactory
C	4.07	Very Satisfactory
D	4.45	Excellent
Grand Mean	4.09	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

The findings on the prevention and mitigation capability level of the four State Universities and Colleges were noticeably the same with the disaster preparedness and disaster response.

Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of rehabilitation and recovery as an entire group

Table 7 presents the disaster risk reduction management capability level of the State Universities and Colleges in terms of rehabilitation and recovery as a whole group. The three statements with the highest ratings and interpreted as "very satisfactory" say that they aid in restoring and improving facilities, livelihood and living conditions, and organizational capabilities of affected communities (M=4.13), analyze the disaster, and improve the plan in the light of experience (M=4.09), and identify persons in charge to assist the rapid recovery of the affected population (M=4.09). The three statements with low ratings and described as "very satisfactory" state that the institution develops a phased conservation program where large quantities of materials are involved (M=3.98), conducts damage assessment (M=3.88), and conducts detailed building inspections (M=3.84). The overall mean is 4.02 interpreted as "very satisfactory". The results show that the institution was more capable of analyzing the disaster and improving the plan in the light of experience and identifying persons in charge to assist the rapid recovery of the affected population but was not so ready in conducting damage assessment and developing phased conservation program where large quantities of materials are involved. The three statements, with lower ratings, show that institutions' less activity was on facilitating the restoration of utilities (electricity, water, etc.), with a rating of "excellent" (M=4.21), conducting damage assessment rated as "excellent" (M=4.20), and develops phased conservation program where large quantities of materials are involved rated as "very satisfactory" (M=4.16). The grand mean is 4.27 interpreted as "excellent".

Table 7. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of rehabilitation and recovery as an entire group

Statement	SUC	
	Mean	Description
Identifies persons in charge to assist the rapid recovery of the affected population.	4.09	Very Satisfactory
Conducts detailed building inspections.	3.84	Very Satisfactory
Conducts preventive procedures and preparation for the next disaster.	4.06	Very Satisfactory
Conducts damage assessment.	3.88	Very Satisfactory
Develops phased conservation program where large quantities of materials are involved.	3.98	Very Satisfactory
Cleans and rehabilitates the disaster site.	4.04	Very Satisfactory
Analyzes the disaster and improves the plan in the light of experience.	4.09	Very Satisfactory
Prepares evacuation and sheltering areas.	4.05	Very Satisfactory
Facilitates restoration of utilities (electricity, water etc.)	4.08	Very Satisfactory

Aids in restoring and improving facilities, livelihood and living conditions and organizational capabilities of affected communities.	4.13	Very Satisfactory
Grand Mean	4.02	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

After disaster was higher than that of the State Universities and Colleges. This rehabilitation and restoration capability will ensure the affected community's normal level of functioning and provide a multidimensional level of recovery. This capability was realized by the joint efforts of the different divisions responsible for performing the tasks such as engineering, social welfare, and disaster risk reduction management.

Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of rehabilitation and recovery when classified as to the institution

Table 8 presents the disaster risk reduction management (DRRM) capability level of the State Universities and Colleges in terms of rehabilitation and recovery when classified as institutions. The rehabilitation and recovery capability level of the sample schools ranged from "very satisfactory" to "excellent" rating. School D (M=4.33) got a rating of "excellent", followed by school A (M=4.22) also "excellent" rating, then school C (M=4.14) with a "very satisfactory" rating, and lastly, school B (M=3.40) with "very satisfactory" rating. The grand mean is 4.02 described as "very satisfactory". The findings show that the rehabilitation and recovery capability level of school A is "excellent", and is also similar to school D with a rating of "excellent". On the other hand, school B is "very satisfactory" while, and school C is "very satisfactory". This result implies that school A, as well as school D with ratings of "excellent", have fully met the criteria and a considerable number of good practices at a level that provides a model for others while school C has fully met the criteria in all respects, at a level that demonstrates good practice.

Table 8. Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (DRRM) in terms of rehabilitation and recovery when classified as to institution

Classification	Mean	Description
Institution		
A	4.22	Excellent
B	3.40	Very Satisfactory
C	4.14	Very Satisfactory
D	4.33	Excellent
Grand Mean	4.02	Very Satisfactory

Legend: 4.21 – 5.00 – Excellent, 3.41 – 4.20 – Very Satisfactory, 2.61 – 3.40 – Satisfactory, 1.81 – 2.60 – Fair, 1.00 – 1.80 –Poor

Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster preparedness when classified as to institution

Table 9 shows the differences in the disaster risk reduction management capability level of the State Universities and Colleges in terms of disaster preparedness classified as to institution. A significant difference existed among the four state universities and colleges in the province of Iloilo in terms of disaster preparedness, $\chi 2$ (80)=10.741, p=.013. This result means that they were not the same in their preparations before and during a disaster. Thus, the null hypothesis which states that there is no significant difference in the level of the disaster risk reduction management capabilities of the State Universities and Colleges in terms of disaster preparedness was rejected. This result implies that the state universities' and colleges' disaster preparedness capabilities were not comparable wherein one SUC was more prepared than the rest before and during a disaster. This result further implies that the four SUCs varied in terms of "providing telephone numbers of emergency and support agencies", "posting maps and floor plans in designated areas", and "listing of school buildings to be used for evacuees in case of community disaster". This result confirms the result of Tullao (2017) that school safety and a positive climate cannot be achieved by a single action but rather by working on effective, comprehensive, and collaborative efforts requiring them to be dedicated, committed school personnel and community service. The findings also support that of Ortizo (2017) that a significant difference existed in the disaster preparedness of the institution as to the number of enrollment and programs offered since in the present study the four schools have different enrollment and programs. These present findings affirm the school-based experience shared in the study of Tullao (2017) that safety and a positive climate can be achieved by working on effective, comprehensive, and collaborative efforts of dedicated, committed personnel and community service.

Table 9. Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster preparedness when classified as to institution

Variables	Computed chi value	Significance Value
Institution	10.741*	0.013
Location	11.092*	0.011

* *<0.05*

Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster response when classified as to institution

Table 10 presents the differences in the disaster risk reduction management capability level of the State Universities and Colleges in terms of disaster response classified as to institution. A highly significant difference existed among the four state universities and colleges in Iloilo as to disaster response, $\chi 2$ (80) =11.575, p=.009. This result means that the four schools covered in the study were not the same in their response during a disaster. Thus, the null hypothesis which states that there is no significant difference in the level of the disaster risk reduction management capabilities of the state universities and colleges in terms of disaster response was rejected. The result reveals that the schools varied in their disaster response capability. The result implies that the schools were different in the "provision of emergency services and assistance during or immediately after a disaster to save lives", "reduce health impacts" and "meet the basic subsistence of the victims". This result confirms the findings of Ortizo (2017) that significant differences existed in the disaster response capability of smaller and bigger schools. The present findings support the study conducted by Alcantara (2015) that disasters related to natural events continue to grow in number, intensity, and impact. In many regions, natural hazards are becoming direct threats to national

security because their impacts are amplified by rapid growth and unsustainable development practices, both of which increase exposure and vulnerabilities of communities and capital assets.

Table 10. Table 7. Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of disaster response when classified as to institution

Variables	Computed chi value	Significance Value
Institution	11.575**	0.009
Location	12.613**	0.006

**< 0.01

Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of prevention and mitigation when classified as to institution

Table 11 presents the State Universities and Colleges' disaster risk reduction management capability level in terms of prevention and mitigation classified as to institution. A highly significant difference was obtained among the four state universities and colleges in the province of Iloilo in terms of prevention and mitigation, $\chi 2(80)=11.867$, p=.008. This result means that they are not comparable in their prevention and mitigation before a disaster. Thus, the null hypothesis which states that there is no significant difference in the level of the disaster risk reduction management capability level of the State Universities and Colleges in terms of prevention and mitigation was rejected. The result reveals the SUCs' prevention and mitigation capability were not alike. The result implies that the SUCs covered in the study were different in terms of "the outright avoidance of adverse impacts of hazards", "organization of committee made up of teachers, administrative personnel, parents and students," and "enforcement of laws, policies, or regulations that deal with disaster management". This result confirms the findings of Bankoff (2009) that approaches to disaster are not just a function of people's perceptions of disaster risk but also their understanding of the prevailing social order. Despite the shared vocabulary which increasingly presents disasters as processes rather than events, takes a proactive rather than reactive approach, and favors the inclusion of stakeholders rather than solely relying on technocratic management, different realities continue to make for different responses and mitigation in times of disasters.

Table 11. Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of prevention and mitigation when classified as to institution and location

Variables	Computed chi value	Significance Value
Institution	11.867**	0.008
Location	12.613**	0.006

**<0.01

The differences in the planning and flexibility of the SUCs, despite their mandates to perform during disasters have attributed to their varied prevention and mitigation capability level.

Difference in the Disaster Risk Reduction Management (DRRM) Capability Level of the State Universities and Colleges (SUCs) in terms of Rehabilitation and Recovery when classified as to Institution

Table 12 reflects the difference in the disaster risk reduction management capability level of the State Universities and Colleges in terms of rehabilitation and recovery when classified as institutions. The four higher education institutions in the province of Iloilo differed significantly in their disaster risk reduction management level in terms of rehabilitation and recovery, $\chi 2(80)=11.096$, p=.011. Thus, the null hypothesis which states that there is no significant difference in the level of the disaster risk reduction management capabilities of the state universities and colleges in terms of rehabilitation and recovery was rejected. This result means that state universities and colleges were not similar in their rehabilitation and recovery practices after the disaster. The result implies that SUCs are not alike in the "conduct of detailed building inspection", "conduct of damaged assessment and cleaning", and "rehabilitation of the disaster site". This result confirms the findings in the study of Ortizo (2017) that a significant difference existed in the rehabilitation and recovery of the SUCs when grouped as to enrollment and programs offered. This result shows that the four Local Government Units in terms of rehabilitation and recovery were not comparable. The result implies that the LGUs were not similar in the "conduct of detailed building inspection", "conduct of damaged assessment", "preparation of evacuation and sheltering areas", and "facilitating the restoration of utilities". These findings support the study of Tullao (2017) that the risk was the probability or threat of damage, injury, liability losses, or any other negative occurrence that is caused by external or internal vulnerabilities such as environmental risk. The learning shared that disaster rehabilitation and recovery restore and improve facilities, and living conditions and reduce disaster risks. Furthermore, the capability level is influenced by effective comprehensive and collaborative efforts, dedicated, committed school personnel, and community service. The dedication and commitment of the personnel vary which also affects their rehabilitation and recovery capability.

Table 12. Difference in the Disaster Risk Reduction Management (DRRM) capability level of the State Universities and Colleges (SUCs) in terms of rehabilitation and recovery when classified as to institution

Variables	Computed chi value	Significance Value
Institution	11.096*	0.011
Location	8.367*	0.039

* *<0.05*

Differences on the Disaster Risk Reduction Management (DRRM) capability level between the State Universities and Colleges (SUCs) in terms of disaster preparedness disaster response, prevention and mitigation and rehabilitation and recovery

Table 13 presents the disaster risk reduction management capability level between the State Universities and Colleges in terms of disaster preparedness, disaster response, prevention and mitigation, and rehabilitation and recovery. Disaster preparedness. A highly significant difference in disaster preparedness existed between the State Universities and Colleges in the province of Iloilo, U (160)=1913.500, p=.000. Thus, the null hypothesis which states that there is no significant

difference in the level of the disaster risk reduction management capabilities between the State Universities in terms of disaster preparedness was rejected. This result means that institutions varied in their preparation before the occurrence of disaster in terms of "provision of specific directions for immediate action", "enough preparation to allow for adjustments and changes of unexpected situations", and "plan that adheres to standard procedure for a particular emergency response" and "provision of an emergency warning system for informing the school population/residents of the actual or impending danger". Moreover, the institutions differed in their "listing of buildings to be used as shelters for evacuees in case of community disaster", "in taking an active role in school/community emergency response", "in assuming a variety of tasks", and "in conducting proper emergency response training".

The result implies that the State Universities and Colleges differed in their disaster preparedness capability level. In terms of disaster response, the capability level of counterpart in terms of location of the four State Universities and Colleges in the province of Iloilo differed significantly, U (160)=2479.500, p=.014, thereby rejecting null hypothesis which states that there is no significant difference on the level of the disaster risk reduction management capabilities of the State Universities and Colleges and Local Government Units in terms of disaster response. Furthermore, they varied in their "pre-arranged signal such as a siren or bell set off immediately by a person-in-charge" and "protocols for students/residents release". The finding implies that SUCs are not comparable in their disaster response capability.

A not significant difference existed in the prevention and mitigation capability level of the State Universities and Colleges in the province of Iloilo, U (160)=2692.000, p=.082, thus, accepting the null hypothesis which states that there is no significant difference in the level of the disaster risk reduction management capabilities of the State Universities and Colleges in terms of prevention and mitigation. The result means that the capability level in terms of prevention and mitigation between the tertiary education were comparable in terms of "providing leadership for the establishment of a school/community emergency and disaster preparedness committee", "establishing an emergency warning system that shall inform the school/community population of the actual or impending danger", "providing a school/community plan for early warning mechanism in place" and "organizing committee made up of faculty administrative personnel, parents, students/LGU personnel and volunteers".

The result implies that the four institutions' prevention and mitigation capability level are comparable. Rehabilitation and recovery. The State Universities and Colleges' rehabilitation and recovery capability level did not differ significantly, U(160)=2841.500, p=.220, thereby accepting the null hypothesis which states that there is no significant difference in the level of the disaster risk reduction management capabilities of the State Universities and Colleges in terms of rehabilitation and recovery. This result means that the schools in terms of rehabilitation and recovery were comparable in "developing phased conservation program where large quantities of materials are involved", "facilitating the restoration of utilities and aids in restoring and improving facilities, livelihood and living conditions and organizational capabilities of affected communities."

Table 13. Differences on the Disaster Risk Reduction Management (DRRM) capability level between the State Universities and Colleges (SUCs) in terms of disaster preparedness disaster response, mitigation and prevention and rehabilitation and recovery

Variables	Computed value	Significance Value
Disaster Preparedness	1913.500**	0.000
Disaster Response	2479.500*	0.014
Prevention and Mitigation	2692.000	0.082
Rehabilitation and Recovery	2841.500	0.220

** <0.05, ** <0.01*

The result implies that the rehabilitation and recovery capability levels of the four state universities and colleges are the same. This further implies that the implementing agencies did not vary in their capability to assess the damaged and restore the area to its normal condition.

Challenges encountered during disasters

The respondents from the State Universities and Colleges encountered various challenges during disasters. *School A*. The responses of the respondents from school A revealed that the challenges they encountered during disasters such as floods and fire were "lack of facilities, lack of proper communications, lack of disaster plan, power shortage and restoration of damages". Likewise, no "protocols for students and no proper emergency procedures, lack of evacuation sites and people panicked because they lack knowledge on how to deal with a certain situation and physical and mental challenges like nervousness and panic". People tend to panic instead of thinking what is the right thing to do because they don't often practice the proper ways on how to handle their selves during disasters. They also encountered "traumas, unavailability of telephone, wounds, lack of equipment and not enough first aid kit". *School B*. People got nervous and tend to panic, during floods, heavy rain, typhoon, and landslides/mudslides.

They are not oriented due to a lack of experience. Some encountered house damage and loss of properties. Likewise, challenges on lack of food, lack of knowledge about the emergency procedure during disasters, lack of shelter, inadequate number of personnel assigned in communication, rescue, and lack of first aid kits were additional problems. There was also conflict on the prioritization of facilities and equipment during the rescue. *School C*. In school C, people panic because they don't know what to do, even when they were in a safe place. They cannot control themselves thinking of the bad situations that just happened due to a lack of knowledge about preparedness. There were not enough evacuation centers. There was delayed transportation of relief goods from the center to the victims. *School D*. The challenges encountered were sometimes, ambulance and fire trucks come late. There were inadequate facilities, loss of properties, damage to infrastructure, physical injuries, loss of livelihood, and loss of lives.

Location A. As to location A, they encountered wounds, life-threatening experiences, infections, deaths of victims, poor communications, network providers (smart/globe/ etc.) were down, and no electrical supply. There was a delay in notice/information, a lack of equipment, and an absence of communication. There was a miscommunication from the DRRM personnel to the stakeholders in public places, a lack of personnel assigned, overcrowded people, late response, lack of volunteers, and difficulty to pass roads. People panic because they wanted to be evacuated ahead of others and lack awareness during an emergency-they do not know what to do. The locality also encountered inadequate facilities, a lack of an evacuation center, and no signage for exits in the centers. *Location B*. Communication was one of the challenges encountered during a disaster due to the topology of the locality. One part was separated from the rest of the towns thus making it difficult to communicate with other communities. The cellular phone signal coverage was affected during a disaster. There was a risk in life, especially among rescuers or responders, and people without knowledge of disaster preparedness tend to panic and at times get out of control. Risky and unpredictable scenarios were encountered as disasters may happen anytime, anywhere depending on the extent of the damage it has created.

It's a big challenge for everyone how to handle such situations with inadequate materials or equipment available during disaster evacuation. The most common is human resources, logistics, the passive character of the community, and coordination with government agencies. Unpreparedness, lack of facilities and power, and lack of volunteers are also some of the problems. *Location C*. It's hard to call or gather volunteers/ responders in case of disaster; there were identified barangays considered flood-prone areas and when disaster strikes mass evacuation is expected; lack of food and water supply; shut down of power supply; responders become victims; the hesitation and refusal of some affected families to comply/follow rules/procedures such as force

evacuation that result to damage/danger to life and properties; lack of evacuation centers for all victims; limited local fund for disaster response; and very limited budget to address response needs were the problems in the locality. *Location D*. Not enough personnel/volunteers, no funding, lack of ordinance for the call of early evacuation; no evacuation and sheltering areas, no exit and evacuation areas intended for the victims, lack of commitment of human resources, inconsistency of reports; no systematic information system, lack of resources, tools, materials and equipment and lack of training and awareness were the identified challenges during disasters.

Overall, the challenges encountered by the respondents were inadequate knowledge of how to cope during disasters, lack of volunteers and personnel to guide the victims, shortage of equipment and supplies, and overcrowded evacuation centers. There was poor communication due to power shut-off, unpassable roads, delayed delivery of relief goods, late arrival of the ambulance, signage not posted in proper places, unavailable list of buildings to be used as an evacuation center, lack of coordination of personnel tasks to facilitate the rescue and evacuation of affected residents and resistance of the citizens to evacuate despite the imminent danger.

Response to the challenges

School A. School A respondents respond to various challenges during disasters by staying calm and thinking of the best way to solve problems, keeping a strong faith by praying, and applying safety tips and procedures learned. In preparation, School A conducts orientation and training on disaster drills for students, faculty, and staff. *School B*. Conducting seminars and drills on disaster preparedness, being calm and looking for a safe place, applying the safety procedures to follow as suggested by the DRRMC and learned during drills, being prepared and updated about the coming disaster, creating a functional school committee to do the responsibilities of DRRM and labeling facilities and equipment for easy identification in times of disasters are some of the ways that school B practices in response to disasters. *School C*. By being responsive and ready, helping those people in need, keeping calm but bold, having faith in the Almighty, and being firm and positive, School C responds to various disasters that come through these practices. *School D*. School D makes t to save emergency numbers, stay calm, evacuate to safe places, and always be prepared and ready at all times to face challenges amidst disasters. *Location A*.

Location A responds to whatever disaster by using the available resources, staying calm but thinking of ways to survive, conducting emergency drills for students and citizens, being aware of DRRM protocols, having teamwork, patience, and faith, asking for help from proper authorities, preparing the evacuation centers and by educating the public of safety procedure during a disaster. *Location B*. Provision of emergency equipment such as two-way radios to be used during operation, training and recruitment of rescuers and responders, the conduct of disaster preparedness activities among barangays, schools, and places to spread awareness, readiness, and positive thinking, provision of services to assist the populace during a disaster and maintain linkages with other agencies are the ways that Location B faces the challenges during disasters. *Location C*. Location C collects the people's cellphone numbers to be used during an emergency, monitors the water control facility for action, packs relief goods, prepares the evacuation centers, advice DRRMC to be always ready, links with other agencies, implements free evacuation and uses the internet to ask for assistance. These actions are their way of responding to whatever disaster situation occurs or affects their locality. *Location D*. Proper education and training, asking for help from volunteer groups, and staying calm and relaxed are the simple ways in which people of locality D face disaster challenges.

The general responses of the victims to the challenges were the following: keep their selves calm and firm that they can surpass, be ready and alert always, pray, spread awareness of DRRM, work by the team, have patience, let peace and order prevail, ask for assistance from proper authorities, prepare the evacuation and sheltering areas, identify exit rooms, maintain MOU with other NGOs, strict implementation of the evacuation policy, conduct immediate response to the affected area, advise all organize committees of DRRMC to be on full alert level, utilize public and

private schools as an evacuation center, link with other Government Agencies and Non-government Organizations, ask for volunteers, and proper education and monitoring.

CONCLUSION

From the findings of this study, the following conclusions arrived: The SUCs have demonstrated good practices of disaster preparedness which provide models for others. The SUCs disaster unit has familiarity with the topography of their respective institution made them more responsive in times of disaster. The SUCs have demonstrated their mandate through good practices in prevention and mitigation. The rehabilitation and recovery capability of the SUCs was enhanced by the available resources funded by the school. The disaster preparedness of the SUCs was influenced by their classification as an institution. The institution was a factor in the disaster response capabilities of SUCs. The SUCs' prevention and mitigation capability levels were comparable. The rehabilitation and recovery capability of the SUCs were influenced by the type of institution. The preparation and response of the four SUCs during disasters were not the same but they were comparable in their prevention and mitigation and rehabilitation and recovery. The challenges encountered by the disaster victims were the inadequacy of their preparation, survival needs, and absence of communication. The victims' strong faith, cooperation, and coordination with proper agencies and authorities made them survive during disasters.

IMPLICATION

The findings and conclusions of the present investigation brought implications for theory and practice related to the interplay among the respondents' capability level in terms of disaster preparedness, disaster response, prevention, mitigation and rehabilitation and recovery as this may be affected by the type of institution. The implementing agency's disaster preparedness such as the provision of telephone numbers of emergency and support agencies, adherence to the DRRM plan to the standard, and active role in school/community emergencies could be attributed to the mandate of the agency and availability of resources. The present findings revealed that the SUCs' higher level of preparedness could be due to their available human resources and budget from the school. The readiness and proactiveness of the SUCs with reinforcement from other agencies had greatly enhanced their capabilities in terms of response, prevention and mitigation, and rehabilitation and recovery as revealed in the present study.

This present study is anchored in the modern disaster theory which treats disaster law as the best portfolio of legal rules. The disaster law and policy is a collection of legal rules that happen to come into play when communities have suffered severe physical damage, but at a deeper level, it is about assembling the best portfolio of legal rules to deal with catastrophic risks – a portfolio that includes mitigation, emergency response, compensation and insurance, and rebuilding strategies. It is the mission of disaster law to increase the preparedness of all social institutions, including official and non-governmental actors, to anticipate sudden, calamitous events, and to bring the optimal portfolio of legal rules to bear when such events occur (Chen, 2012).

RECOMMENDATIONS

Based on the findings and conclusions derived from the study, the researcher recommends the following:

1. The State Universities and Colleges may review and strengthen the strategies used in preparing the personnel assigned in times of disasters to be more responsive and competent.

2. The SUCs DRRMC personnel may consider posting maps and floor plans in designated areas and provide school plans for early warning mechanisms to facilitate the easy evacuation of victims.

3. The SUCs may allocate more funds and develop conservation programs where large materials are involved during rehabilitation and recovery.

4. The faculty members may integrate with their subject matter Disaster Risk Reduction Management to prepare the students for times of calamity.

5. The coordinator of the Office of Students Affairs may include in the calendar of activities the conduct of symposia and drills on disaster preparedness, response, prevention and mitigation, and rehabilitation and recovery in collaboration with other stakeholders.

6. Disaster Risk Reduction Management may be included in the orientation at the start of the academic year for the awareness of the students and signage may be posted in conspicuous places so it could assist the school officials and citizens during calamities.

7. Future researchers may use this study as a reference for allied problems and include other variables not covered in the present investigation.

8. A validation study is further recommended to strengthen the present findings.

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