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Student Awareness of Disaster Risk Reduction and Management of a Private Higher Education Institution

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Abstract

Disaster risk reduction and management is the concern, particularly in schools. One must be aware of the various indicators surrounding this very important phenomenon. In this study, the researchers endeavored to surface students' level of awareness of the DRRM indicators. The approach was quantitative, and the research methods were descriptive and comparative. The technique in gathering data was through a questionnaire administered via Google form. The study was conducted in the college department of Saint Mary's University with 495 participants. The study recorded more female respondents coming from the four schools of SMU, and most respondents were those who did not have any DRRM-related organization. The findings showed a good level of awareness of disaster risk reduction. However, as evidenced by the lower mean ratings in human resources, programs and activities, and structural resilience, it could be concluded that some students are not aware of some of the standards and protocols of local and national DRR programs and activities. It was also found that regardless of Sex and School, respondents' awareness of disaster and its programs do not vary that much. However, DRRM-related organizations could be considered a factor that affects the perception of students' level of awareness of DRRM programs and activities. Moreover, students' perceptions do not vary when compared across the seven DRRM indicators.

Keywords: DRR Policy and plans, emergency preparedness and response, risk assessment and vulnerability, recovery and rehabilitation

1. Introduction

Disasters are known to be contingent and, most of the time, are unpredicted. Every nation has established risk reduction and management relative to its environmental structures and geographical conditions. Disaster Risk is *the likelihood of loss of life, injury or destruction, and damage from a disaster in a given period* (UNDRR Assessment Report, 2015). Disaster risk reduction (DRR) is the policy objective of anticipating and reducing risk. In contrast, disaster risk management (DRM) is called the enactment of DRR as it defines the undertakings that seek to minimize risk (UNISDR Global Assessment Report, 2015).

In the Philippines, disaster risk and management were guarded through Republic Act No. 10121, forming the National Disaster Risk Reduction and Management Council (NDRRMC). The Commission on Higher Education (CHED) is a regular council member. One of its thrusts is the prime responsibility of instilling and inculcating awareness in students, which consists of knowledge, skills, and values on disaster risk reduction and management that will serve them to face the challenges of life beyond the academe (21st Gawad Kalasag, 2019). In this case, schools must establish and operationalize all possible mechanisms for students to be aware of the use of resources for the prevention, mitigation, and preparedness for disasters and climate change adaptation.

The NDRRMC forwarded four domains, wherein all higher education institutions are encouraged to enhance their disaster risk reduction and management activities. These are policy and plans, capability/capacity; emergency preparedness and response; and partner or stakeholder agreement.

1.1 DRRM Policy and Plans

The Philippines is considered one of the places where risks are imminent. It is one of the disaster-prone places given the natural geological and hydro-meteorological existences, intensified by man-induced disaster situations (Domingo & Olaguera, 2017). NDRRMC then established the national policy and planned downloaded to the Municipal Disaster Risk Reduction and Management Council (MDRRMC). Higher education institutions (HEIs) are also given copies of these. They are mandated to develop their mechanisms for greater information and dissemination.

Among the indicators provided in the 21st Gawad Kalasag (2019), policy and plans are given 30 points and distributed through the issuances of policies, plans, memorandum, resolutions, and guidelines. The HEIs' programs that would highlight the existence of DRRM in the curriculum and the contingency plans are also given with particular points. Lastly, rehabilitation, recovery, information education campaign, and advocacy plans must also be in place for all stakeholders in the academic institutions.

1.2 DRRM Capability/Capacity

The capability or capacity of HEIs is given the highest point in the 19th Gawad Kalasag (2019), which indicates that undertakings that would strengthen this must be intensified. The capability or capacity consists of four indicators: human resources, programs, and activities; structural resilience; and risk assessment and vulnerability. HEIs must encourage students to engage and participate in training and seminars on DRR aspects for human resources. The HEIs must ascertain that they have focal or resource persons on DRR undertakings. Drills and exercises must also be done regularly. The three components of the National Service Training Program (NSTP) of the University are Literacy Training Service (LTS), Civic Welfare Training Service (CWTS), and Reserve Officers' Training Corps (ROTC), which must also have activities related to DRRM.

Meanwhile, programs and activities related to training on DRRM, the conduct of risk assessment and mapping, formulation of the plan, and having a hub for sharing information about DRRM. This also includes the integration of DRRM in the general education courses and areas of specialization or significant subject subjects of the various curricular program.

Lastly, the capability of HEIs is or is the presence of risk assessment/s and vulnerability. In this part, HEIs should have a risk assessment in disaster response operations. This includes the availability of multi-hazard maps, vulnerability maps, capacity resource maps, risk maps, and other related DRRM concerns. The presence of manual or standard operating procedures for specific hazards and identifying evacuation points/centers and clinics or hospitals must also be well established by HEIs.

1.3 DRRM Emergency Preparedness and Response

Emergency preparedness and response are essential aspects of DRRM. HEIs must establish the presence of early warning systems to respond to disasters like floods, earthquakes, typhoons, etc. The documentation of best practices for sharing is encouraged in every locality. In the evaluation conducted by the PIDS, they claimed that Republic Act 10121 had established several structures and functions for DRRM in the country, from the national to the local level. The important aspect is for leaders, administrators, or decision-makers to impose, monitor, and sustain these established mechanisms (Domingo & Olaguera, 2017).

Some studies have recommended more research on students' awareness levels for more information, improvement, and policy recommendations to the education sector and the national government. In the United States, a study of the emergency preparedness knowledge of students in a certain college found out that while the students displayed a fair amount of awareness of DRRM issues, there were still spaces for improvement, especially in more risky disasters like earthquakes and fire (Kupietz, 2015). In the Philippines, the study of Sanchez, *et al*. (2019) revealed that their student-respondents were aware of some aspects of DRRM. However, it does not coincide with the actual assessment of their awareness. They then recommended stricter compliance and adherence to university drills and strengthened connections between students and the safety team.

1.4 Conceptual and Analytical Framework

This study was anchored on the national framework of NDRRMC as provided in the implementing rules and regulations of RA 10121. Foremost of the policy declaration relates that the state must: *"uphold the people's constitutional rights to life and property by addressing the root causes of vulnerabilities to disasters; adhere to and adopt the universal norms, principles, and standards of humanitarian assistance, incorporate internationally accepted principles and guidelines of disaster risk management; adopt a disaster risk reduction and management approach that is holistic, comprehensive, integrated and proactive in lessening the*

socioeconomic and environmental impacts; and *develop, promote and implement comprehensive NDRRM plan that arm to strengthen the capacity of the national government and the local government units."*

Part of the national framework is the creation of the National Disaster Risk Reduction and Management Council, headed by the Secretary of the Department of National Defense (DND) as Chairperson. Vice-Chairpersons are the Secretaries of the Department of Social Welfare and Development (DSWD), Department of Science and Technology (DOST), and National Economic Development Authority (NEDA). The Commission on Higher Education (CHED) is one of the regular members.

The four indicators adopted from NDRRMC, also used in the 21st Gawad Kalasag (2019), could well be supported by Planned Behavior Theory (TPB). This theory presented by Najafi, *et al.* (2017) reflects that this is an efficient framework for examining prior behaviors. The main factor of the TPB is the individual's intention to accomplish a given undertaking. Intentions are expected to capture the motivational factors that impact behavior. Likewise, these are determined by three antecedent and motivational factors. First is the attitude toward the behavior, which is related to the degree to which one person has an advantageous or a disadvantageous assessment of the behavior being questioned. The second predictor is a social factor branded as a subjective norm; this refers to the apparent social pressure to do or not do a particular activity. The third predictor of TPB is the degree of perceived behavioral control, which reflects the perceived struggle of the individual or group performances.

As a rule of thumb, the more beneficial the attitude and subjective norm toward a behavior, and the greater the perceived behavioral control, the greater should be an individual's intention to accomplish the undertaking being considered. The intention then is perceived as one direct antecedent of the actual undertaking. Nevertheless, the level of success will be contingent not only on one's intention but on such partly non-motivational factors as well as the availability of requisite opportunities and resources that embody people's actual control over the activity.

With all these premises, the TPB then supports HEIs undertakings for the policy and plans, capability/capacity; emergency preparedness and response; and partner or stakeholder agreement as framed by the NDRMMC and adopted by the Gawad Kalasag award.

1.5 Statement of the Problem

- What are the profile characteristics of students in terms of:
  - Sex;
  - School; and
  - DRRM-related Organizations?
- What is the level of awareness on Disaster Risk Reduction and Management of Saint Mary's University along with the following:
  - Policy and Plans
  - Capability/Capacity;
  - Emergency preparedness and response; and
  - Partner or Stakeholder Agreement?
- Are there significant differences in the responses when grouped according to profile characteristics?
- Are there significant differences across four indicators of DRRM?

1.6 Statement of the Hypothesis

1) No significant differences exist in the responses when grouped according to profile characteristics.
2) There are no significant differences across the four indicators of DRRM.

2. Methodology

This study used a quantitative approach, and the research methods were descriptive and comparative. The technique in gathering data was through a questionnaire administered via Google Form. The descriptive part presented the profile characteristics and the level of awareness on DRRM of SMU about policy and plans, capability/capacity, emergency preparedness and response, and partner or stakeholder agreement. The comparative part covered the significant responses when grouped according to profile and the DRRM indicators.

This study was conducted in the college department of Saint Mary's University, a private Catholic HEI in Bayombong, Nueva Vizcaya, supervised by the *Congregatio Immaculati Cordis Mariae* (CICM). The vision statement relates that SMU is a premier CICM Catholic educational institution drawn into communion by the Wisdom of God, dedicated to forming persons exemplifying excellence, innovation, and Christ's mission. Its

motto in Latin is *Sapientia a Deo* or Wisdom from God in English. It accommodates students mostly in Nueva Vizcaya, but some feeder schools include the provinces of Quirino, Ifugao, Isabela, and Cagayan. SMU is one of the top-performing schools/universities in Region II (Maslang *et al.*, 2021).

The sampling process was stratified random sampling. The respondents came from the four schools of SMU, which are the School of Accountancy and Business (SAB), School of Engineering, Architecture and Information Technology (SEAIT), School of Health and Natural Sciences (SHANS), and School of Teacher Education and Humanities (STEH). The survey focused on the third, fourth, and fifth-year students as they were the ones who experienced the DRRM undertakings of the University before the pandemic. The researchers were able to get a total of 495 respondents.

This study adopted the checklist of NDRRMC, which is used in the Gawad Kalasag award for higher education institutions (HEIs) category. It detailed pertinent items reflecting the four indicators: policy and plans, capability/capacity, emergency preparedness and response, and partner or stakeholder agreement. The researchers crafted each indicator's profile characteristics and open-ended questions as part of the study's objectives.

The following techniques were used in the treatment of data:

1) For the profile characteristics of students in terms of Sex, School, and involvement in any of the school's organizations, frequency counts and percentages were used;
2) In terms of the level of awareness on Disaster Risk Reduction and Management of Saint Mary's University concerning policy and plans, capability/capacity, emergency preparedness and response, and partner or stakeholder agreement, mean and standard deviation were used to present the results. The guide for interpretation is shown in Table 1.

Table 1. Scale and Qualitative Description

Scale	**Qualitative Description**
1.00 – 1.49	Fully Not Aware
1.50 – 2.49	Not Aware
2.50 – 3.49	Aware
3.50 – 4.00	Fully Aware

3) In terms of the significant difference when grouped according to profile, the statistical test used the parametric test, T-test for sex and DRRM-related organizations variables, and One-Way ANOVA for school variables.
4) For the comparison across the indicators of DRRM, One-Sample Test was used.

3. Results and Discussion

Section 1. Profile characteristics of students

The profile characteristics in this study were Sex, School, and DRRM-related organizations. Table 2 shows the responses in frequency and percent.

Table 2. Profile characteristics of students (N=495)

Sex	***f***	***%***	**School**	***f***	***%***	**DRRM-related organizations**	***f***	***%***
Male	232	46.9	SAB	135	27.3	None	337	68.1
Female	263	53.1	SEAIT	115	23.2	1-2 organizations	158	31.9
			SHANS	140	28.3			
			STEH	105	21.1			

As shown, almost 50% were male, and more than 50% were female. In terms of school, almost 30% were from the School of Accountancy and Business (SAB), almost 25% were from the School of Engineering, Architecture and Information Technology (SEAIT), and almost 30% were from the School of Health and Natural Sciences (SHANS). More than 20% were from the School of Teacher Education and Humanities (STEH). For the

DRRM-related organization, most respondents did not have with almost 70%, and more than 30% had 1–2 organizations. This would show that female respondents were slightly more significant in this study than male respondents. The number of respondents from the four schools was statistically balanced, with the SHANS having a little more than the three other schools.

Section 2. Level of awareness on Disaster Risk Reduction and Management

The Disaster Risk Reduction and Management (DRRM) covered in this study were: Policy and Plans; Capability and Capacities (Human Resource, Programs, and Activities, Structural Resilience, Risk Assessment, and Vulnerability); Emergency Preparedness and Response; and Stakeholder Agreement.

Table 3. Level of awareness of Policy and Plans

Policy and Plans	**Mean**	**SD**	**Qualitative Description**
1. There are existing issuances, policies, plans, memorandum, resolutions, orders, or guidelines regarding DRR.	3.18	.58	Aware
2. SMU's strategic plan includes priorities under the four thematic areas of DRRM, with corresponding budget allocation.	2.65	.64	Aware
3. SMU has a contingency plan (educational continuity plan) (i.e., cross-registration of students, admission of students, and transferees).	3.15	.61	Aware
4. SMU has a projected recovery and rehabilitation plan or plan for recovery after a possible disaster has occurred.	3.15	.67	Aware
5. SMU has an information education campaign (IEC) and Advocacy plan.	3.20	.63	Aware
Mean	**3.07**	**.46**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

It was apparent in Table 3 that all the items under Policy and Plans, including the general mean, were rated between 2.50 – 3.49, described as *aware*. The lowest rating was on: *SMU's strategic plan includes priorities under the four thematic areas of DRRM, with the corresponding budget allocation* (Mean=2.65). Meanwhile, the highest was on: *SMU has an information education campaign (IEC) and Advocacy plan* (Mean=3.20).

These findings could mean that the surveyed students were aware of the policy and plans of the University regarding DRRM. With the National Service Training Program (NSTP), wherein all the respondents had undertaken, SMU's plans and policies were being discussed and disseminated. The students were aware of the existing issuances, policies, plans, memorandum, resolutions, orders, or guidelines regarding DRR as well as on contingency plan, rehabilitation plan, and most especially on the information education campaign (IEC) and Advocacy plan of the University.

The findings in this study on the awareness of students on the University's DRRM plans could be related to the study of Padernal and Borja in 2016 of a certain school in Surigao City, where they found a resounding awareness of students regarding their DRRM undertakings. Likewise, in the study of Pasion (2020) among students of Balligui Senior High School in Quirino province. These studies highlighted the efforts of administrators in following the guidelines set forth by the NDRRMP.

Table 4. Level of Awareness of Human Resources

Human Resource	**Mean**	**SD**	**Qualitative Description**
1. Some personnel (faculty members, utility, etc.) have been trained or have an educational background in DRR.	2.90	.63	Aware
2. The percentage of personnel who have attended seminars/trainings on DRR sponsored or organized by the University is at least 30%.	3.06	.69	Aware
3. There are officials/faculty/staff and students officially designated/appointed as DRR focal persons/representatives.	2.83	.61	Aware
4. There is personnel who are knowledgeable in preparing a basic disaster report.	3.14	.57	Aware

Human Resource	Mean	SD	Qualitative Description
5. There is personnel capable of conducting damaged assessment and needs analysis.	2.36	.63	Not Aware
6. A proportion of students actively participate in NSTP and University/College outreach programs on DRRM.	3.20	.57	Aware
Mean	**2.92**	**.43**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

As shown in Table 4, all the items were also rated between 2.50 – 3.49, described as *aware* except for the presence of personnel capable of conducting damaged assessment and needs analysis (Mean=2.36). The lowest rating on awareness was on: *The personnel capable of conducting damaged assessment and needs analysis* (Mean=2.36). The highest rating was on the item: *A proportion of students participating actively in NSTP and University/College outreach programs on DRRM* (Mean=3.20).

These results could imply that while the students were aware of the training, educational background of personnel, faculty, and staff of the University, as well as the substantial participation of students in DRRM activities, the lowest rating on the item regarding DRR focal person/representative relates to the need of this to be emphasized. The presence of the DRR focal person/representative may not be felt or observed within the University. Moreover, the students' non-awareness of the capability of personnel in conducting damaged assessment and needs analysis implies the absence of these in the University. The students must have observed training, workshops, drills, and other DRRM activities. Still, they have not seen any presentation of damaged assessment and need analysis results in forums or any gathering.

Tizon and Comighud (2020), in their study in all public schools of Bayawan City Division, Negros Oriental for SY 2018-2019 regarding their implementation of the public schools' disaster risk reduction management program and level of capabilities to respond, revealed a similar result showing that the level of awareness of students is high but noted that the level of awareness was highest in human resources. They then emphasized the need for established human resources in schools to work mainly on the various aspects of DRRM and represent the school in seminars, training, and workshops that the NDRRMC national and local are conducting.

Table 5. Level of awareness of Programs and Activities

Programs and Activities	Mean	SD	Qualitative Description
1. The School conducts DRR training.	3.19	.60	Aware
2. The School conducts a risk assessment and mapping.	2.05	.61	Not Aware
3. There is an opportunity in the formulation of the DRRM Plan.	3.21	.65	Aware
4. The School has DRRM hub information sharing.	2.40	.63	Not Aware
5. There is an integration of DRRM in the general education curriculum and areas of specialization.	2.48	.63	Not Aware
Mean	**2.67**	**.46**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

Table 5 provides the level of awareness of students on programs and activities. It was apparent that though the general rating was between 2.50 – 3.49 described as *aware*, three out of five items were rated from 1.50 – 2.49 described as *Not Aware*. The students were aware that: the school conducts DRR training, and opportunities to formulate the DRRM plan are present.

However, students were not aware whether: the school conducts a risk assessment and mapping (Mean=2.05), the school has DRRM hub information sharing (Mean=2.40), and there is the integration of DRRM in the general education curriculum and areas of specialization (Mean=2.48). The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011 – 2028 opines that schools, universities, and other academic institutions, and all private and public institutions, must conduct a risk assessment and mapping by themselves aside from the regular monitoring of authorities within their vicinities. These will ensure that facilities and undertakings that manage disasters are in place and implemented.

The School's DRRM hub information sharing is also essential, which serves as the venue where DRRM programs, activities, and other pertinent information can be found and channeled to various stakeholders in the University. Lastly, the integration of DRRM in the general education curriculum and areas of specialization could be held for wider information and dissemination of the safety rules and guidelines. The idea of the integration is that it is not enough to have placards and signboards or the presence of fire extinguishers. Still, the actual carrying out and use of these are imperative.

Concerning curriculum integration, Rogayan and Dollete (2020), based on their study on disaster awareness and preparedness in Zambales, Philippines, proposed the following topics in various curricular programs: Disaster Science Management Concepts in Environmental Science; Effects of Disaster on Biodiversity in Ecology; Translation of Disaster Concepts and Terms in Filipino / English; Community-Based Disaster Response in NSTP; Republic Act 10121 in Social Science subjects; Geography Literacy and the Disaster in Geography; First Aid and Injury Prevention during a disaster in PE and Health; and UN Sustainable Goals in Special Topics in Education.

Table 6. Level of awareness on Structural Resilience

Structural Resilience	**Mean**	**SD**	**Qualitative Description**
1. DRR office (permanent or tentative) established buildings.	2.41	.63	Not Aware
2. There is a budget allocated for DRRM programs/training.	2.82	.64	Aware
3. There is/are equipment and facility/is designated for training purposes.	3.25	.60	Aware
4. There are search and rescue and medical equipment.	3.22	.57	Aware
5. There are efficient and effective IEC materials on hazards specific to the institution.	3.10	.61	Aware
Mean	**2.96**	**.44**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

Table 6 reflected the level of awareness of students on structural resilience. As gleaned in the table, students were aware that: *there is/are equipment, and facility/is designated for training purposes (Mean=3.25)*. This was the highest rating among the listed items. However, *students' awareness of DRR office (permanent or tentative) established buildings (Mean=2.41)* got the lowest rating among the listed things. Overall, items got a total mean of 2.96, describing that students were *aware of* terms on structural resilience.

These findings could mean that while there were manifestations of the aspects of structural resilience like the presence of budget, equipment, and IEC materials, a DRR office was not established. The budget, equipment, and IEC materials were generated and assigned to various offices like the NSTP, ROTC, MERT, and some extent at the Physical Plant and Property Development and Management Office (PPPDMO) and the Inventory Management Office (IMO).

Table 7. Level of awareness on Risk Assessment and Vulnerability

Risk Assessment and Vulnerability	**Mean**	**SD**	**Qualitative Description**
1. Site maps are available (hazard, vulnerability, capacity, and resource).	2.45	.59	Not Aware
2. There is a database on elements at risk (i.e., chem labs, library, records, etc.)	3.10	.62	Aware
3. There are standard operating procedures (SOPs)/Manuals in place for specific hazards in the University.	2.39	.57	Not Aware
4. Timely, accurate and reliable responses are evident.	3.20	.59	Aware
5. There is proper identification of evacuation/relief distribution points/centers.	3.25	.58	Aware
6. There is a determination of clinics and hospitals to address casualties.	3.28	.57	Aware
7. There is the issuance of public advisories to students/faculty.	3.23	.57	Aware
8. Is there support to faculty and students in terms of emergency financial assistance, waiver of tuition and fees, and grants-in-aid?	3.20	.59	Aware

9. There is coordination with appropriate agencies, re: intervention/partnerships and extension of resources and services (financial, counseling, and others)	3.17	.58	Aware
10. NSRC/NSTP students/faculty are tapped for disaster response as respondents/volunteers.	3.22	.57	Aware
Mean	**3.05**	**.39**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

Table 7 shows that in terms of risk assessment and vulnerability awareness, most students were aware except for two items. The item with the highest mean in this assessment and vulnerability component is the *determination of clinics and hospitals to address casualties (Mean=3.28). T*he lowest mean is *standard operating procedures (SOPs)/Manuals in place for specific hazards in the University (Mean=2.39).* As gleaned from the table, students are aware of risk assessment and vulnerability with an overall mean of 3.05.

Site maps on hazards and vulnerable places must have been identified by the administrators of Saint Mary's University, but the students were not aware of these; hence, the need for more information and presentation of these in conspicuous places so these could be easily noticed. Similarly, SOPs/manuals in place for specific hazards in the University could have been crafted. They could be found in various offices but, again, these must have been not made available to students.

Table 8. Level of awareness on Emergency Preparedness and Response

Emergency preparedness and response	**Mean**	**SD**	**Qualitative Description**
1. There is an available contingency plan/site emergency mechanism for the University.	3.16	.59	Aware
2. There is an available evacuation plan and early warning system.	3.24	.58	Aware
3. There is an existing organized emergency response team.	3.26	.57	Aware
4. There are teams periodically trained on DRR.	3.24	.59	Aware
5. There is periodic conduct of safety inspections.	3.27	1.2	Aware
6. There is periodic maintenance of the installations/facilities.	3.17	.59	Aware
7. There is periodic conduct of earthquake and fire drills.	3.28	.58	Aware
Mean	3.23	.43	Aware

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

As gleaned from the table, *periodic conduct of earthquake and fire drills* with a mean of 3.28 got the highest rating among all the items listed. However, statement 1 received the lowest rating on students' awareness of Emergency Preparedness and Response with a mean of 3.16. Overall, it was evident in Table 8 that students are *aware* of all areas mentioned above, with an overall mean of 3.23. These findings could mean that the level of awareness on emergency preparedness and the response of SMU students is high and that the school periodically implements the DRR protocols and standards. This would also show that the University submits and performs local and national DRR undertakings as prescribed for academic institutions to abide with.

Table 9. Level of awareness on Partner or Stakeholder Agreement

Partner or Stakeholder Agreement	**Mean**	**SD**	**Qualitative Description**
1. There is a participation of NGOs, business, private sectors, people's organizations, and others.	3.11	.60	Aware
2. SMU has resource mobilization.	3.20	.62	Aware
3. SMU has existing LGU alliances	3.22	.61	Aware
4. SMU has exiting alliances with PDRRMO/CDRRMO/MDRRMO?	3.25	.60	Aware
Mean	**3.20**	**.47**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

Table 9 presented the overall mean of awareness of students on partner or stakeholder agreement. Also, Statement 4 on the *existing alliances with PDRRMO/CDRRMO/MDRRMO* received the highest mean of 3.25. However, the *participation of NGOs, businesses, private sectors, people's organizations, and others* received the lowest mean of 3.11. The table showed that students are aware of all areas mentioned above, with an overall mean of 3.20. This means that, as the level of awareness on emergency preparedness and response, the students were also aware of all the items regarding partner or stakeholder agreement.

These results could mean a strong adherence of the University to the importance of engagement with the public sector and other private institutions. The school is a member of various agencies at the municipal and provincial level and an implementer of many laws and ordinances concerning the safety of its constituents and disaster management.

Table 10. General Mean Ratings

General Mean Ratings	**Mean**	**SD**	**Qualitative Description**
1. Policy and Plans	3.07	.46	Aware
2. Capability/Capacity			
a. Human Resources	2.93	.43	Aware
b. Programs and Activities	2.67	.46	Aware
c. Structural Resilience	2.96	.44	Aware
d. Risk Assessment and Vulnerability	3.05	.39	Aware
3. Emergency Preparedness and Response	3.23	.43	Aware
4. Partner or Stakeholder Agreement	3.20	.47	Aware
Mean	**3.01**	**.44**	**Aware**

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

Table 10 shows the general mean ratings of all the DRRM aspects presented in this study. It was apparent that all were rated *aware*. The table shows that emergency preparedness and response received the highest mean of 3.23. However, the capability of programs and activities had a mean of 2.67. Overall, the students are aware of all areas mentioned above. This means that it could be inferred that SMU complies with the standards and protocols of local and national DRR programs and activities. Also, as evidenced by the lower mean ratings in human resources, programs, activities, and structural resilience, SMU needs to improve and strategize how these could be felt and experienced by the students.

This study reflects a good level of awareness of disaster risk reduction. Although students rated items they were unaware of, they knew most things, from policy plans to stakeholders' agreements. This could also mean that the University complies with the DRR standards and protocols. Similarly, students were participative in the DRR program and activities. They understand and believe that DRR undertakings are essential in schools and the community where they belong. Fernandez and Shaw (2013) claimed that it is necessary to be aware and participate in DRR undertakings, particularly in developing and strengthening local disaster prevention, mitigation and response. This is so because the Philippines is one of the most disaster-prone countries in the world and has been constantly among the top five countries with the highest figure of reported disaster occurrence in the last six years.

Section 3. Comparison in the responses when grouped according to profile characteristics

As presented in Table 11, all the p-values were greater than .05, indicating no significant difference in the level of awareness when grouped according to sex. This could mean that sex could not be a factor in disaster risk reduction and management responses. This means further that regardless of sex or being a male or female student, respondents' awareness of disaster and its programs do not vary that much.

Table 11. Significant Differences when Grouped According to Sex

DRRM Aspects	Sex	Mean	SD	Qualitative Description	*t*-test	Sig.
Policies and Plans	Male	3.01	.50	Aware	-.383	.702
	Female	2.91	.41	Aware		
Human Resource	Male	3.01	.46	Aware	-.370	712
	Female	2.82	.46	Aware		
Programs and Activities	Male	3.03	.44	Aware	.457	.648
	Female	2.95	.44	Aware		
Structural Resilience	Male	3.21	.38	Aware	.410	.682
	Female	3.02	.39	Aware		
Risk Assessment and Vulnerability	Male	3.14	.46	Aware	.383	.374
	Female	3.02	.40	Aware		
Emergency Preparedness and Response	Male	3.21	.38	Aware	.890	.713
	Female	3.06	.37	Aware		
Stakeholder Agreement	Male	3.20	.39	Aware	1.284	.200
	Female	3.21	.40	Aware		
N: Male – 232, Female – 263				df – 493		

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

This result has implications for the current perspective on gender when it comes to disaster, risk, and security. Gaillard et al. (2016) claimed that the consideration of gender in the realm of a disaster had been focused on the vulnerability and capacities of women. However, the man-woman dichotomy is a vague concept to address the gendered dimensions of a disaster as it fails to capture the realities on the ground and the significant role of women in the society regarding DRR undertakings. Likewise, in the study of Asio (2021) and Serafica (2023) on disaster awareness and level of compliance to disaster programs, he also found out that sex does not impact the respondents' awareness level. What he found to have a significant difference was in terms of location or place of residence, particularly those living in upper and lower areas.

Table 12. Significant Differences when grouped according to school

DRRM Aspects	School	Mean	SD	Qualitative Description	F	Sig.
Policies and Plans	SAB	3.05	.47	Aware	2.621	.059
	SEAIT	3.04	.46	Aware		
	SHANS	2.89	.42	Aware		
	STEH	3.12	.48	Aware		
Human Resource	SAB	3.14	.47	Aware	2.052	.105
	SEAIT	2.98	.42	Aware		
	SHANS	2.88	.44	Aware		
	STEH	3.14	.52	Aware		
Programs and Activities	SAB	3.02	.43	Aware	2.565	.054
	SEAIT	2.80	.39	Aware		
	SHANS	2.90	.41	Aware		
	STEH	3.15	.50	Aware		
Structural Resilience	SAB	3.15	.40	Aware	2.618	.051
	SEAIT	3.20	.38	Aware		
	SHANS	3.16	.31	Aware		
	STEH	3.21	.44	Aware		

DRRM Aspects	School	Mean	SD	Qualitative Description	F	Sig.
Risk Assessment and Vulnerability	SAB	3.18	.41	Aware	2.618	.053
	SEAIT	3.21	.39	Aware		
	SHANS	3.30	.35	Aware		
	STEH	3.25	.54	Aware		
Emergency Preparedness and Response	SAB	3.17	.41	Aware	2.867	.066
	SEAIT	3.22	.38	Aware		
	SHANS	3.30	.37	Aware		
	STEH	3.25	.53	Aware		
Stakeholder Agreement	SAB	3.17	.46	Aware	.465	.707
	SEAIT	3.18	.47	Aware		
	SHANS	3.22	.42	Aware		
	STEH	3.18	.51	Aware		
N: Male – 232, Female – 263				df – 493		

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

Just like in the sex variable, it was evident in Table 12 that the analysis of variance for significant differences in disaster awareness levels when grouped according to school had no significant difference based on the computed p-values, which were more significant than .05. This means that regardless of school, disaster awareness levels are the same among the respondents. Padernal and Borja (2016) related that schools are efficient and effective in their campaign on disaster risk reduction and management as student-respondents reflected awareness on many issues, including government programs.

Table 13. Significant Difference when Grouped According to DRRM-related Organization

DRRM Aspects	DRRM-related Organization	Mean	SD	Qualitative Description	*t*-test	Sig.
Policies and Plans	No Organization	2.81	.48	Aware	-.343	.702
	With 1-2 Organizations	3.01	.41	Aware		
Human Resource	No Organization	3.01	.44	Aware	-.360	**.020**
	With 1-2 Organizations	3.12	.43	Aware		
Programs and Activities	No Organization	2.90	.42	Aware	.458	**.001**
	With 1-2 Organizations	3.10	.40	Aware		
Structural Resilience	No Organization	3.01	.37	Aware	.411	**.003**
	With 1-2 Organizations	3.22	.39	Aware		
Risk Assessment and Vulnerability	No Organization	3.10	.45	Aware	.323	.374
	With 1-2 Organizations	3.22	.39	Aware		
Emergency Preparedness and Response	No Organization	3.01	.37	Aware	.810	**.049**
	With 1-2 Organizations	3.26	.40	Aware		
Stakeholder Agreement	No Organization	3.01	.37	Aware	1.148	.200
	With 1-2 Organizations	3.21	.38	Aware		
N: Male – 232, Female – 263				df – 493		

Legend: 1.0 – 1.49: Fully Not Aware; 1.5 – 2.49: Not Aware; 2.50 – 3.49: Aware; 3.5– 4.0: Fully Aware

On the aspect of DRRM-related organization, Table 13 showed the p-values of Human Resource (.020), Programs and Activities (.001), Structural Resilience (.003), and Preparedness and Response (.049) were lesser than .05, which indicates a significant difference. Not surprisingly, this means that there were varying ideas and

issues between respondents who had no DRRM-related organizations and those who had 1 – 2 organizations. Furthermore, it followed that those who had 1 – 2 DRRM-related organizations had higher mean ratings than those who had none. Joining an organization in college, whether extra or co-curricular, is an option for every student. This is not required as the students are free to be involved or focus on their studies. However, some organizations have their inherent value and significance, incredibly if they seriously advocate for their members' growth and development. Like these DRRM-related organizations (ROTC, responses team, student councils), they are helpful in the acquisition of knowledge and skills in DRRM programs and undertakings.

Section 4. Significant differences across DRRM indicators

Table 14. Comparison of Perceptions across the DRRM Indicators

Descriptive Statistics (N=495) and Ranks								
Domains	**Mean**	**SD**	**QD**	**Mean Rank**	**Chi. Sq.**	**df**	**Sig.**	**Decision**
1. Policies and Plans	3.07	.46	A	4.77				
2. Capability/Capacity								
a. Human Resource	2.93	.43	A	3.51				
b. Programs and Activities	2.67	.46	A	5.82				
c. Structural Resilience	2.96	.44	A	1.90	389.06	6	.055	Accept Ho
d. Risk Assessment and Vulnerability	3.05	.39	A	3.02				
3. Emergency Preparedness and Response	3.23	.43	A	5.45				
4. Stakeholder Agreement	3.20	.47	A	5.43				

Legend: 1.0 – 1.49: Fully Not Aware (FNA); 1.5 – 2.49: Not Aware (NA); 2.50– 3.49: Aware (A); 3.5 – 4.0: Fully Aware

The computed p-value for the comparison of perceptions on DRRM indicators was greater than .05, indicating no significant difference. This could mean that students' perceptions do not vary when compared across the seven DRRM indicators. It was also evident that, as presented in Section 2, all the indicators were rated between 2.50 – 3.49 and described as *aware.*

Contrary to this result, the study of Rogayan and Dollete (2020) claimed that the various indicators of DRRM have specific levels and differences in their nature and scope; thus, these were related to the differences in the perception of their respondents. The indicators of DRRM have a corresponding level of knowledge and performance. Some of these could not be performed effectively when they could not be understood in the first place. Similarly, Jackson *et al.* (2017) also argued that individuals in a particular community have varying rates of awareness and susceptibility regarding the disaster. These would then direct or influence how they act, plan and recover from an inevitable disaster. However, it is important to note that no matter the differences in perceptions and level of awareness, this present study and the aforestated related studies acknowledge that disaster risk reduction, mitigation, and management are everyone's concerns.

4. Conclusions

Female students were slightly greater than male respondents. The number of respondents from the four schools was statistically balanced, with the SHANS having a little more than the three other schools. Most respondents were those who did not have any DRRM-related organization. This study reflects a good level of awareness of disaster risk reduction. However, as evidenced by the lower mean ratings in human resources, programs, activities, and structural resilience, it could be concluded here that SMU complies with the standards and protocols of local and national DRR programs and activities. In this study, sex and schools were not factors in disaster risk reduction and management responses. Regardless of Sex and School, respondents' awareness of disaster and its programs do not vary that much. However, DRRM-related organizations were considered factors that affect the students' level of awareness of DRRM programs and activities. Students' perceptions do not vary when compared across the seven DRRM indicators.

5. Recommendations

Students should be encouraged to be more aware of DRRM programs and undertakings. They should be

encouraged to participate in various activities. Each school should also have programs for the students to actively engage in DRRM activities through curricular and extra-curricular student organizations. Human resources of DRRM in the University should be more visible and perform their predetermined roles and functions. The school should also add more staff for DRRM, establish an office they could utilize, and develop a hub where critical communications could be channeled synchronously and asynchronously. Programs and activities should also be periodic, assessed, and evaluated by students for their continuous development and sustenance. Other variables related to DRRM should be included in further studies like objective knowledge and skills of students regarding safety and other actual implementation of disaster risk reduction and management.

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