

## KNOWLEDGE ON NATURAL AND ANTHROPOGENIC DISASTERS OF POLITICAL LEADERS IN THE FIRST DISTRICT OF ZAMBOANGA DEL NORTE

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### **Abstract**

*Both emergency management and major catastrophes require a wide array of leadership competencies. Political leaders will devise policy and implement programs that will reduce the loss of life and property, protect the environment, reduce the vulnerability and improve the organizational coordination of their constituents out of harms away from natural and anthropogenic disasters. This research paper aimed to determine the profile, level of knowledge on natural and anthropogenic disasters among political leaders and to test whether age and educational attainment associate their level of knowledge on natural disasters. The descriptive survey method was used with the aid of checklist survey questionnaire. Barangay Captains and Councilors were the respondents of the study from the seven (7) municipalities including one city in the First District of Zamboanga del Norte. Results revealed that majority of the political leaders are males, 40 years old and above, attended high school educations, earned Php10,000 pesos and below monthly income and have stayed in their locality for more than 20 years. Further, natural disasters that are mostly experienced among political leaders are earthquake, typhoon, thunderstorm, La Niña, El Niño and floods. Furthermore, gender and educational attainment of political leaders associate on knowledge on natural disaster typhoon while, residency associates on knowledge on natural disaster El Niño. In this line, political leaders should manifest alertness and coping ability in times of crises and disasters, for constituents look up to leaders in the community who have the vision and direction that will lead to the return of normalcy after every disaster that happens. Hence, these public servants should have ample knowledge on the different disasters that might occur in their respective municipality.*

**Keywords and Phrases:** *Knowledge on Natural Disaster, Anthropogenic Disasters, Political leaders, First District of Zamboanga del Norte*

### **Introduction**

Both management of routine emergencies and major catastrophes require a wide array of leadership/management competencies. The leaders will devise policy and implement programs that will reduce vulnerability, limit of loss of life and property, protect the environment, and improve multi-organizational coordination in disasters (McEntire and Dawson 2007). Under the challenging and stressful conditions of emergencies, the public expects political leaders to manage man-made and natural disasters and to move its constituents out of harm's way. This expectation occurs with the certain level of knowledge the political leaders have. A disaster refers to a broader understanding of events ranging from natural disasters, man-made and social problems (Farazmand 2007). Disasters can take many different forms, and the duration can range from an hourly disruption to days or weeks of ongoing destruction.



Disasters and leadership are intertwined in that both concepts have a nature to complement one another. It is the leader's responsibility to respond to the threats and uncertainties stemming from disasters. It is the challenge of the leader to bring things back to normal. Despite the negative effects that are present in times of crisis, it is important to acknowledge the fact that crises generate a window of opportunity in which a leader has the chance to reform institutional structures and long-standing policies (Boin&t'Hart 2003).

The vast literature on disaster prevention and response has appreciated the political dimension of disasters for decades (Olson, 2000; Platt, 1999; Blaikie et al, 1994; Albalatrerd, 1993; Bommer, 1985; Cuny, 1983; Davis and Seitz, 1982; Diggins, Wright, and Rossi, 1979; bney and Hill, 1966). Disasters could be classified into two categories: manmade and natural disasters. Manmade disasters include terror attacks, hazmat spill, sabotage, chemical accidents, political unrest, groundwater contamination, cyberterrorism, bomb threats or any other disasters that are consequences of actions of human beings. Natural disasters include all natural events such as hurricanes, floods, earthquakes, and droughts. In particular, manmade disasters present more in-depth problems for emergency responders. Technological developments open new horizons for better mitigation and preparedness to disasters and overcoming their negative consequences. On the flip side of the coin, with technological advancement we become more vulnerable to new types of threats such as communication system breakdowns, bio-nuclear terrorism, and devastating oil spills that like what they experienced in the Gulf of Mexico. One important point about the researchers coping ability with disasters is that in times of crises and disasters we look to leaders in the community for vision and direction that will lead to the return of normalcy. It is this crisis management that defines the true devastation of the event (Boin et al. 2005; t'Hart, Rosenthal, and Kouzmin 1993).

In the Philippines, Assistant Secretary Raymund E. Liboro, concurrent director of DOST's Science and Technology Information Institute, called for more disaster response leaders in the Philippines amidst the increasing frequency of natural calamities. He added that although mayors and organizations committed to disaster response stand at the frontline of disaster management, this does not exempt any other member of society from becoming a responsible disaster leader. He explained that mayor's need responsible; barangay chairmen and other dedicated people working under their stewardship in order to effectively carry out their tasks when disasters occur. Meanwhile, political leaders, defined in this study connotes to the Barangay Captain and Barangay/City Councilors of the First District of Zamboanga del Norte. Thus, it is very important to know how knowledgeable the political leaders of the First District of Zamboanga del Norte in responding the occurrences particularly on natural and anthropogenic disasters.

### **Objectives of the Study**

This research paper aimed to analyze the knowledge of political leaders on disaster by key demographics: gender, age, educational attainment, monthly income, and number of years stay. Thus, it sought to identify the type of natural and anthropogenic disasters in the First District of Zamboanga del Norte. Further, it determined the level of knowledge on natural and anthropogenic disasters among political leaders in the First District of

Zamboanga del Norte. To test whether the key demographics associate their level of knowledge on natural disasters experienced among political leaders.

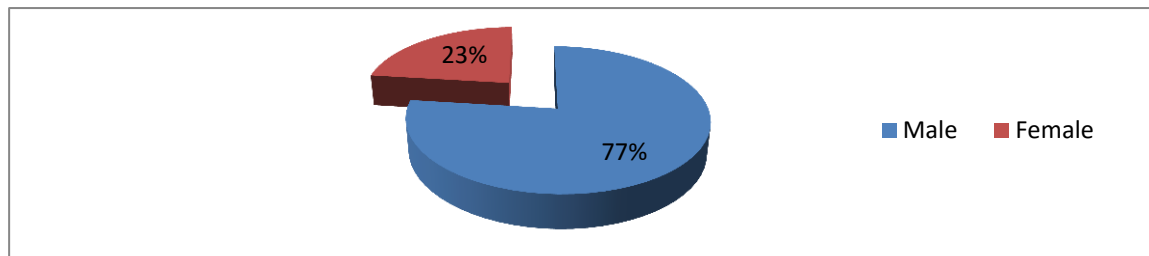
### Methods

The descriptive survey method with the aid of Standardized Disaster Preparedness Survey Questionnaire (Galleto, P. & Campiseno, S. 2014) was used to collect the necessary data. Secondary data were collected particularly on the types of natural and anthropogenic disasters. In this study, natural disasters include the following: earthquake, landslide, tsunami, volcanic eruption, typhoons, storm surge, floods, thunderstorm, tornado, La Niña and El Niño. While anthropogenic disasters includes; collapse structure/building, fire, electrical connections and home emergencies.

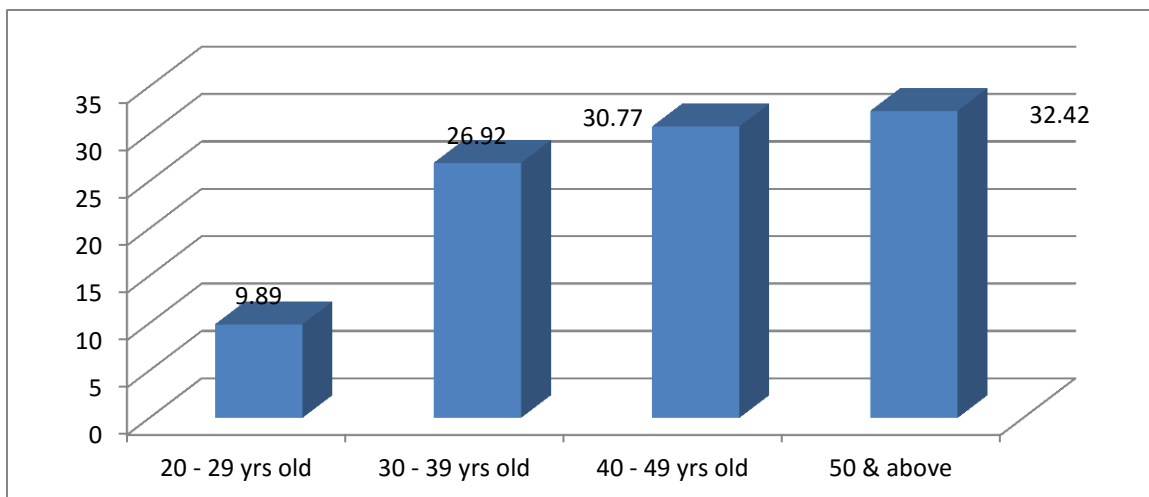
The respondents of the study are the political leaders in the Municipality of the First District of Zamboanga del Norte. Specifically, the Barangay Captain and Barangay Councilors who have direct knowledge and would disseminate to their constituents information regarding natural and anthropogenic events. Seven (7) Municipalities and one (1) city were covered in the study with 182 political leaders.

Frequency, Percentage and Chi-Square Test for Association were utilized to present the gathered data relative to the target objectives. Analysis and interpretation of data were made.

### Results and Discussions



**Figure 1** Frequency Distribution of Respondents in terms of Gender



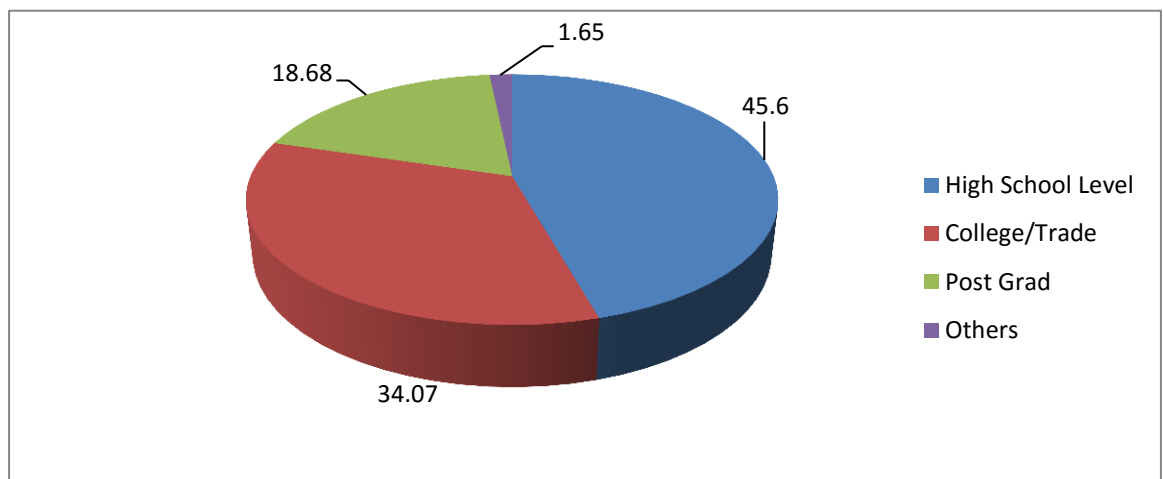
**Figure 2** Frequency Distribution of Respondents in terms of Age



The profile of the political leaders in the First District of Zamboanga del Norte reflected in Table 1. Most of the political leaders among the municipalities of the First congressional District of Zamboanga del Norte are males (140 or 76.92%) compared to

the female leaders. This means that males outnumbered the females in their involvement in the politics. The males usually exhibit interest and will to be servants in the government. According to research from the center for American Women and Politics (CAWP), stated that women are severely underrepresented at virtually all levels of elected officials. Moreover, consistently shows that females are less likely than men to aspire to a political career. They consider it as a distant future goal.

The data showed further that most of the political leaders in the municipalities of the First congressional District of Zamboanga del Norte belong to the age bracket of 50 years old and above (32.42%) as shown in Fig. 2. This is followed by the age brackets of 40-49 years old (30.77%) and 30 - 39 years old (26.92%) and the younger age bracket follows with 9.89%. This goes to show that many of the constituents have voted the old ones to be the public servants as age could be contributory to their decision making compared to the young ones.

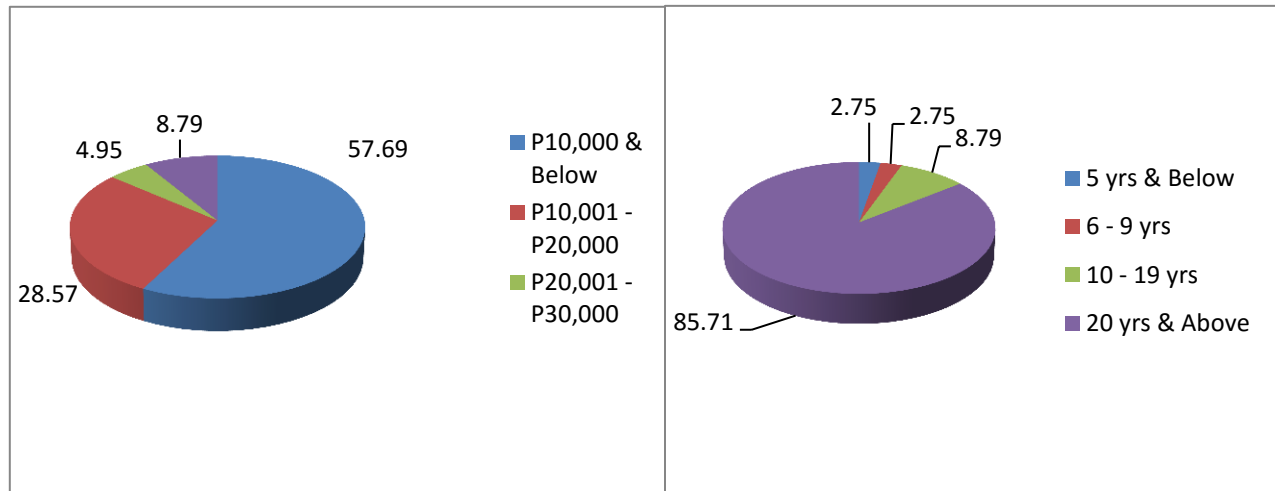


**Figure 3 Frequency Distribution of Respondents in terms of Educational Qualification**

Most of the respondents have attended high school with 45.6% as presented in Fig. 3. A good number of them were in college or trade school with 34.07%. Some of them were into graduate studies with 18.68%. This implies that majority of the political leaders in the selected municipalities of the first congressional district of Zamboanga del Norte were chosen by their constituents not by their educational qualifications since most of them are just in high school.

Majority of the political leaders' monthly income is 10,000 and below with 57.69% (see Fig.4). A number of them have a monthly income range of 10,001-20,000 with 28.57%. Seven of them have a monthly income of 20,001-30,000 with 4.95%, and 8.79% of them gained 30,001 and above monthly income. This implies that most of the political leaders earned minimal income that could just be enough for a day-to-day living.

Finally, it showed that most of the political leaders as respondents have stayed longer in the selected municipalities in the first district of Zamboanga del Norte (Fig. 5). Majority of them have lived in their municipality for 20 years and more with 85.71%. About 8.79% of them had been staying for 10-19 years, 5 or 2.75% have been staying for 6-9 years and below 5 years. This means that most of the political leaders are not new to the environment and that these public servants know if not all but most of the happenings in their municipalities.



**Figure 4** Frequency Distribution of Respondents in terms of Monthly Income

**Figure 5** Frequency Distribution of Respondents in terms of Residency

**Knowledge Natural Disasters as Experienced among Political Leaders.** Shown in Table 1 are the data illustrating the common natural disasters experienced among the respondents around the first district of the province of Zamboanga del Norte for the last five years. Most of the respondents in the seven (7) municipalities and one (1) City experienced earthquake, typhoon, flood, thunderstorm, la niña, and El Niño. As cited by Werker, E. & Cohen, C. (2008) states that in 1995, a flood occurred in Libya when troubles with the “great man-made river” water pipeline caused \$42 million damages.



Table 1 Common Natural Disasters Experienced among Respondents for the Last Five Years

Municipalities	Natural Disasters																					
	Earthquake		Landslide		Tsunami		Volcanic Eruption		Typhoon		Storm Surge		Flood		Thunderstorm		Tornado		La Niña		El Niño	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Dapitan City	48	6	11	43	4	50	4	50	32	22	22	32	41	13	30	24	17	37	46	8	46	8
Piñan	10	3	5	8	1	12	3	10	10	3	0	13	12	1	12	1	7	6	13	0	13	0
Rizal	27	2	13	16	6	23	4	25	15	14	6	23	22	7	16	13	7	22	24	5	24	5
Sibutad	14	1	1	14	0	15	0	15	10	5	1	14	3	12	13	2	5	10	11	4	14	1
Mutia	8	1	1	8	1	8	1	8	7	2	0	9	8	1	6	3	1	8	6	3	6	3
Sergio Osmeña	15	8	13	10	2	21	2	21	9	14	0	23	8	15	10	13	1	22	13	10	14	9
La Libertad	9	4	6	7	1	12	0	13	1	12	0	13	7	6	10	3	8	5	4	9	12	1
Polanco	24	2	3	23	1	25	0	26	21	5	2	24	17	9	14	12	3	23	25	1	24	2
Total	155	27	53	129	16	166	14	168	105	77	31	151	118	64	111	71	49	133	142	40	153	29

In essence, in the event of natural disasters occurred, political leaders leadership will take the necessary precautions to prevent disaster. Majority of them responded *no* on whether they experienced landslide, tsunami, volcanic eruption, storm surge, and tornado; though there are a number of them who said they experienced these natural disasters mentioned. The study of UNEP (1999) corroborated the present investigation, which mentioned that with the onset of global warming, it is likely that the incidence of natural shocks will only increase in the years ahead.

On the other hand, in the municipality of Sergio Osmeña, a good number of respondents said that they experienced landslide. As shown in the results other natural disasters enumerated above were not felt. This result is supported by the contention of Samuel Prince (1998) which states that people around the world are far more likely to encounter death or harm because of the occurrence of these natural catastrophes.

**Table 2 Knowledge of Political Leaders on Anthropogenic Disasters**

Municipalities	Anthropogenic Disasters							
	Collapse Structure		Fire		Electrical connection		Home emergencies	
	Yes	No	Yes	No	Yes	No	Yes	No
Dapitan City	18	36	33	21	35	19	39	15
Piñan	8	5	13	0	12	1	10	2
Rizal	9	20	23	6	23	6	19	10
Sibutad	5	10	15	0	13	2	13	2
Mutia	2	7	7	2	4	5	4	5
Sergio Osmeña	3	20	11	12	13	10	7	16
La Libertad	4	9	4	9	10	3	11	3
Polanco	10	16	23	3	24	2	19	7
Total	59	123	129	53	134	48	122	60

**Knowledge of Political Leaders on Anthropogenic Disaster.** The data presented in Table 2 illustrate whether the respondents were knowledgeable on the different anthropogenic disasters. Among the selected locale of this investigation, most of the political leaders were aware of the disasters such as fire, electrical problem, and home emergencies except for collapse of structure with which majority of the respondents in the selected municipalities responded said “no” on their knowledge of it. This implies that these man-made disasters occurred in the municipalities and the political leaders were sensitive on these as part of their responsibility as public servants in order to respond to the needs of the constituents if the need arises. This result is supported by an idea that despite the negative effects that are present in times of crisis, it is important to acknowledge the fact that crises generate a window of opportunity in which a leader has the chance to reform institutional structures and long-standing policies (Boin&t’Hart 2003). In addition, political leaders must be an effective emergency manager; one must become well-acquainted with all departments and agencies that will have a role in disasters, McEntire, D. & Dawson, G. (2007).

**Table 3 Test whether age associate with Political Leaders’ Knowledge on Natural Disasters**

Variables		Chi-Square value	p-value	Remarks
	Knowledge on			
Age	Earthquake	3.617	0.164	No Association
	Typhon	3.03	0.220	
	Flood	0.305	0.858	
	Thunderstorm	2.353	0.308	
	La Niña	5.379	0.068	
	El Niño	1.294	0.730	

**Age against knowledge of Political Leaders on Natural Hazards.** Table 3 shows the result of the test whether age associates with political leader’s knowledge on natural disasters. As reflected in the results, age does not have any association on the knowledge





of the selected political leaders as to the occurrence of the natural catastrophes, they will just come and go. Nobody has an idea of the exact date of the incidence though there are authorities and offices which have the capacity to detect their presence. This is supported by Farazmand(2007) which states that disasters can take many different forms, and the duration can range from an hourly disruption to days or weeks of ongoing destruction.

Consequently, the odds that the older a political leader be more aware and knowledgeable on natural disasters in the First District of Zamboanga del Norte is 1.97. In other words, an old one political leader would preferably knowledgeable on natural disasters of about 1.97 times in their respective community compared to young ones.

**Table 4 Test of Association between Gender and Knowledge on Natural Hazards**

Variables		Chi-Square value	p-value	Remarks
	Knowledge on			
Gender	Earthquake	1.121	0.290	No Association
	Typhoon	7.416	0.0006*	Significant
	Flood	1.103	0.748	No Association
	Thunderstorm	0.397	0.528	
	La Niña	0.273	0.601	
	El Niño	0.292	0.589	

Note: \* means gender associates typhoon

**Association between gender and knowledge of political leaders on natural hazards** was presented in Table 4. As figure out in the table, gender has no association on the natural hazards indicators except typhoon. Along with this, knowledge of male and female political leaders has bearing on the preparation and awareness on natural hazard (typhoon). Evidently, the proportion of male political leaders' knowledge on the natural hazard (typhoon) is twice (50%) as much as compared to female political leaders (26%). Chowdhury, M. (2001), corroborated the present findings, which stated that women and men must equally participate in climate change, disaster risk reduction decision-making processes at community, national, regional and international levels. In contrast, around the world, women strive to reduce disaster risk by reducing the hazards to which they and their families are exposed, using both local and specialist knowledge on natural hazards.

**Table 5 Test of Association between Monthly Income and Knowledge on Natural Hazards**

Variables		Chi-Square value	p-value	Remarks
	Knowledge on			
Monthly Income	Earthquake	2.373	0.123	No Association
	Typhoon	0.147	0.702	
	Flood	0.001	0.970	
	Thunderstorm	0.541	0.462	
	La Niña	0.485	0.486	
	El Niño	0.012	0.912	



**Monthly Income against knowledge of Political Leaders on Natural Hazards.** Table 5 present the test whether monthly income of political leaders associate knowledge on natural hazards. As reflected in the table, monthly income does not have any association on the knowledge of the selected political leaders as to the occurrence of the natural catastrophes in their community.

**Table 6 Test of Association between Educational Attainment and Knowledge on Natural Hazards**

Variables		Chi-Square value	p-value	Remarks
	Knowledge on			
Educational Attainment	Earthquake	2.099	0.350	No Association
	Typhoon	7.744	0.021*	Significant
	Flood	1.066	0.587	No Association
	Thunderstorm	0.838	0.658	
	La Niña	3.439	0.179	
	El Niño	3.972	0.137	

Note: \* means educational attainment associates typhoon

**Educational Attainment against knowledge of Political Leaders on Natural Hazards.** Table 6 illustrates the test of association between educational attainment and knowledge on natural hazards. As shown in the table, educational attainment shows no association in the natural hazards enumerated above except for typhoon which depicts significance. This means that the level of education of the political leaders will associate on the knowledge on the natural hazard that might occur on their community particularly typhoon. Further, it simply implies that the more educated a political leader is the more knowledgeable he is on the natural catastrophe (typhoon).

**Table 7 Test of Association between Residency and Knowledge on Natural Hazards**

Variables		Chi-Square value	p-value	Remarks
	Knowledge on			
Residency	Earthquake	0.485	0.486	No Association
	Typhoon	1.138	0.286	
	Flood	2.540	0.111	
	Thunderstorm	1.655	0.198	
	La Niña	0.062	0.804	
	El Niño	4.062	0.044	Significant

Note: \* means Residency associates El Niño

**Residency against knowledge of Political Leaders on Natural Hazards.** Presented in Table 7 is the test of association between residency and knowledge of political leaders on natural hazards indicators. As reflected in the table, residency of political leaders shows association on knowledge on the natural hazard El Niño. This indicates that the



longer a political leader is living in the community the more knowledgeable he/she is compared to the new ones.

## Conclusions

Based on the results of the investigation, the researchers hereby conclude. Males usually exhibit interest and will to be servants in the government. In addition, many of the constituents have voted the old ones to be the public servants as age could be contributory to their decision making compared to the young ones. They were chosen by their constituents not by their educational qualifications since most of them are just in high school but their dedication as public servants. Consequently, most of the political leaders earned minimal income that could just be enough for a day-to-day living, and are not new to the environment and that these public servants know if not all but most of the happenings in their municipalities. The respondent- political leaders manifest alertness on the different phenomenon (natural and anthropogenic disasters) that occurs anytime. Moreover, they were sensitive on the anthropogenic disasters that occur on their respective municipality as part of their responsibility as public servants in order to respond to the needs of the constituents. Finally, the more educated the political leader is the more knowledgeable he is on different occurrences that may happen in their municipalities.

## Recommendations

With the conclusions as bases, the following recommendations are hereby offered. Political leaders should have ample knowledge on the different disasters that might occur. They should manifest coping ability in times of crises and disasters as constituents look to leaders in the community who have the vision and direction that will lead to the return of normalcy after every disaster that happens. The JRMSU- Main Campus, will conduct an extension programs relative to disaster preparedness and awareness on natural hazards in the First District of Zamboanga del Norte.

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