PERSONAL AND DEMOGRAPHIC DETERMINANTS OF DISASTER PREPAREDNESSIN THE FIRST DISTRICT INZAMBOANGA DEL NORTE

Ninfa B. Pangilinan and Marietta V. Banga
Jose Rizal Memorial State University, Main Campus, Dapitan City

Abstract

This study was conducted to determine the personal and demographic determinants of disaster preparedness in the first district of Zamboanga del Norte. Finding revealed that earthquake, tropical cyclone, flood and thunderstorm were dominantly experienced by the respondents for the past five years. Young and old residents, educated and less educated, employed and not employed, poor and not poor, married and not married, resided in a place longer or living in an insured and not insured houses were found not significant determinants of disaster preparedness. However, malesand females significantly determined disaster preparedness where females were assumed to be often vulnerable to hazards because of their role-related responsibilities and more – risk averse than the males. Hence, paying careful regard to proposing disaster preparedness plan should be formulated which includes activities and measures to be taken in advance to ensure effective response to the impact of hazards.

Keywords and Phrases: *personal, demographic, determinants, disaster preparedness*

Introduction

The Philippines, being located in the storm belt, is highly prone to natural disasters such as earthquake, landslide, tsunami, volcanic eruption, typhoon, storm surge, flood, thunderstorm, tornado, fires and extreme climatic variability. It is not surprising that each year, thousands of lives and livelihood are damaged and loss by these inevitable calamities. However, the gravity of the effect of these disasters can be reduced through disaster preparedness of the individual and the population. It is for this reason that policy-makers, practitioners and members of research community around the world necessitate to seeking effective and efficient means of overcoming disasters through disaster preparedness.

Lindel(2011) stressed that higher income households are more likely to be insured against disasters and property owners are more likely to prepare for hazards than renters. In terms of gender, women are often vulnerable to hazards because of their role-related care giving responsibilities and because of their greater tendency to be at home, perceive risk differently from men, and generally more-risk averse. With respect to age contrary, elderly persons experienced deprivation relative to their younger and, by virtue of life experiences; younger people are unable to avoid effects of disaster. Moreover, Fothergill and Peek (2004) revealed that the poor is more vulnerable to natural disasters due to factors as place and type of residence, building construction, social exclusion, and linkages.

It is important, therefore, that there must be linkages in services and emergency planning to address the need during disasters (Aldrich and Benson, 2008). Tierney et al. (2001) also averred that risk perceptions, language, social bonds, income inequality and economic resources, gender, and age are the factors that affect the extent and quality of disaster preparedness. They also pointed out that those minority group members are more prone to disaster losses due to their information sources of hazards and their assignment of credibility to the information. Moreover, language also constitutes a barrier to involve in the emergency planning process, hence, predictors of preparedness should play emergency response-related behaviors.

In effect to the above premise, this study was conducted to determine the personal and demographic determinants of disaster preparedness in the first district of Zamboanga del Norte. The finding of the study is an important basis for proposing preparedness strategies that support to reduce the impact of future natural and human-induced hazards. Likewise, investing effective mechanism at the constituents in the first district of Zamboanga del Norte is expected to help management of risks. Most importantly, the result of this study will provide line agencies, government organizations, and non-governmental organizations to support JRMSU on its proposed plan of action for disaster preparedness.

Methods and Materials

This study used the descriptive survey method of research with the questionnaire as its main instrument. To support and further verify the information gathered, a one-on-one interview with the respondents was conducted. There were 390 respondents involved in the study of which 78 were from Dapitan City, 42 were from La Libertad, 47 were from Rizal, 48 were from Sergio Osmeña, 41 were from Sibutad, 41 from Mutya, 48 were from Polanco and 45 were from Piñan. Frequency counting and percent were used to determine the natural disasters experienced by the respondents in the past five years and the disaster preparedness in the first district in Zamboangadel Norte. Moreover, Chi-square test was utilized to determine the determinants of disaster preparedness of the respondents in the province.

Results

Table 1 shows the personal and demographic profile of the respondents in the first district of Zamboanga del Norte. The table divulged that bulk of the respondents were young (64.4%) generally male (60%), educated (59.2%), not employed (94.1%), poor (69.5%), married (80.5%), and resided in not insuredhome (97.2%),for 20 years and more (85.9%). It means that life and experiences of the respondents inhabited largely in their locality.

Table 1 Personal and Demographic Profile of the Respondents

Variables		Frequency	Percent
Age	Young	251	64.4
	Old	139	35.6
	Total	**390**	**100.0**
Gender	Male	234	60.0
	Female	156	40.0
	Total	**390**	**100.0**
Educational Level	Less Educated	159	40.8
	Educated	231	59.2
	Total	**390**	**100.0**
Occupation/Position	Employed	22	5.6
	Not Employed	368	94.1
	Total	**390**	**100.0**
Monthly Family Income	Poor	271	69.5
	Not Poor	119	30.5
	Total	**390**	**100.0**
Civil Status	Single	59	15.1
	Married	314	80.5
	Widow	15	3.8
	Separated	2	.5
	Total	**390**	**100.0**
Residency	Less than one year	4	1.0
	1 – 5 years	12	3.1
	6 – 9 years	9	2.3
	10 – 19 years	30	7.7
	20 years or more	335	85.9
	Total	**390**	**100.0**
Home	Not Insured	379	97.2
	Insured	11	2.8
	Total	**390**	**100.0**

The Natural Disasters Experienced by the Respondents in the First District of Zamboanga del Norte for the Past Five Years. Table 2 depicts natural disasters experienced by the respondents in the first district of Zamboanga del Norte for the past five years. Respondents revealed that earthquake, tropical cyclone, floods, and thunderstorm were dominantly experienced by the respondents for the past five years but some encountered landslide and tornado which usually occurred during tropical cyclone with heavy rains. The table reveals further that tsunami was the least experienced due to earthquake that struck only in low magnitude level in the first district of the province. On the other hand, volcanic eruption was met by some of the respondents though the disaster never occurred in the localities. It means that tsunami and volcanic eruption experiences may be encountered in other places where the respondents resided prior to this survey.

Table 2 The Natural Disasters Experienced by the Respondents in the First District of Zamboanga del Norte for the Past Five Years

Factors	Yes	Percent	No	Percent
Earthquake	339	86.9	51	13.1
Landslide	140	35.9	250	64.1
Tsunami	24	6.2	366	93.8
Volcanic Eruption	45	11.5	345	88.5
Tropical Cyclone	202	51.8	188	48.2
Storm Surge	103	26.4	287	73.6
Floods	227	58.2	163	41.8
Thunderstorm	236	60.5	154	39.5
Tornado	83	21.3	307	78.7

The Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte. It can be seen in Table 3 that more than 50% of the respondents signified that they were prepared in the occurrence of floods, storm surge, and landslide hazards. However, bigger percentage of the respondents indicated unprepared with the eventualities of volcanic eruption, tornado, thunderstorm, tsunami, earthquake, tropical cyclone, and human induced hazards. In totality, almost 70 percent of the respondents confirmed that they were unprepared of the occurrence of disasters. This finding means that people of the first district in Zamboanga del Norte should be educated about the negative impacts of natural hazards to develop and inculcate in themselves the value of preparedness.

Table 3 The Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte

Factors	Yes	Percent	No	Percent
Earthquake	104	26.7	286	73.3
Landslide	197	50.5	193	49.5
Tsunami	86	22.1	304	77.9
Volcanic Eruption	73	18.7	317	81.3
Tropical Cyclone	151	38.7	239	61.3
Storm Surge	199	51.0	191	49.0
Floods	224	57.4	166	42.6
Thunderstorm	142	36.4	248	63.6
Tornado	82	21.0	308	79.0
Extremely Climatic Variability	195	50.0	195	50.0
Human-Induced Hazards	177	45.4	213	54.6
Overall	**119**	**30.5**	**271**	**69.5**

Age and Gender as Determinants of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte. It can be viewed in Table 4 that age was not a determinant of disaster preparedness. This means that the residents whether young or old possessed similar capacity to avoid the effects of disaster. In totality however, gender

was the only determinant of disaster preparedness among respondents in the first district of Zamboanga del Norte. This means that gender did translate disaster preparedness among the respondents. Finding supported the claimed of Lindell (2011), that women are often vulnerable to hazards because of their role-related responsibilities and generally more- risk averse than their counterpart.

Table 4 The Personal Determinants (Age and Gender) of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte

Factors	Age (X^2)	p-value	Interpretation	Gender (X^2)	p-value	Interpretation
Earthquake	0.307	0.580	Not Significant	0.107	0.743	Not Significant
Landslide	0.583	0.445	Not Significant	0.335	0.563	Not Significant
Tsunami	3.453	0.063	Not Significant	1.203	0.273	Not Significant
Volcanic Eruption	0.399	0.528	Not Significant	0.719	0.396	Not Significant
Tropical Cyclone	0.423	0.515	Not Significant	0.088	0.766	Not Significant
Storm Surge	1.225	0.268	Not Significant	5.753	0.016	Significant
Floods	0.196	0.658	Not Significant	1.370	0.242	Not Significant
Thunderstorm	0.110	0.740	Not Significant	2.134	0.144	Not Significant
Tornado	0.128	0.721	Not Significant	0.208	0.648	Not Significant
Extremely Climatic Variability	0.264	0.607	Not Significant	0.171	0.679	Not Significant
Human-Induced Hazards	0.506	0.477	Not Significant	0.140	0.709	Not Significant
Overall	**0.108**	**0.742**	**Not Significant**	5.662	0.017	**Significant**

Educational Level and Occupation/Position as Determinants of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte. Table 5reveals that occupation/position was a determinant of tsunami and earthquake. This means that the not employed is more vulnerable to tsunami and earthquake due to factor as incapacity to secure oneself and the family. In general, however, educational level and occupation/position were not determinants of disaster preparedness among the respondents in the first district of Zamboanga del Norte. This means that educational level and occupation/position did not translate disaster preparedness. This implies that being educated or less educated is not an indicator for a difference in disaster preparedness. Likewise, employed and not employed residents of the first district in Zamboanga del Norte have similar possession in terms of disaster preparedness.

Table 5 The Personal Determinants (Educational Level and Occupation/Position) of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte

Factors	Educa-tional Level (X^2)	p-value	Interpretation	Occupation /Position (X^2)	p-value	Interpretation
Earthquake	0.115	0.735	Not Significant	4.176	0.041	Significant
Landslide	0.082	0.775	Not Significant	0.712	0.399	Not Significant
Tsunami	2.992	0.084	Not Significant	6.378	0.012	Significant
Volcanic Eruption	3.548	0.060	Not Significant	0.000	0.998	Not Significant
Tropical Cyclone	0.127	0.722	Not Significant	0.082	0.775	Not Significant
Storm Surge	0.002	0.968	Not Significant	0.519	0.471	Not Significant
Floods	0.200	0.655	Not Significant	0.765	0.382	Not Significant
Thunderstorm	0.439	0.508	Not Significant	0.179	0.673	Not Significant
Tornado	0.079	0.778	Not Significant	0.320	0.571	Not Significant
Extremely Climatic Variability	0.456	0.499	Not Significant	1.544	0.214	Not Significant
Human-Induced Hazards	0.262	0.609	Not Significant	3.510	0.061	Not Significant
Overall	**0.033**	**0.856**	**Not Significant**	**0.467**	**0.497**	**Not Significant**

Monthly Family Income and Civil Status as Determinants of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte. It can be viewed in Table 6 that monthly family income and civil status did not significantly translate preparedness on natural and human-induced hazards. This means that the poor, not poor, single, married, widow and separated residents were not determinants of disaster preparedness.

Table 6 The Personal Determinants (Monthly Family Income and Civil Status) of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte

Factors	Income (X^2)	p-value	Interpretation	Civil Status (X^2)	p-value	Interpretation
Earthquake	5.355	0.021	Significant	2.286	0.515	Not Significant
Landslide	3.035	0.081	Not Significant	7.491	0.058	Not Significant
Tsunami	1.851	0.174	Not Significant	7.135	0.068	Not Significant
Volcanic Eruption	0.145	0.703	Not Significant	0.630	0.890	Not Significant
Tropical Cyclone	0.391	0.532	Not Significant	3.360	0.339	Not Significant
Storm Surge	0.749	0.387	Not Significant	4.542	0.209	Not Significant
Floods	1.761	0.185	Not Significant	1.707	0.635	Not Significant
Thunderstorm	1.172	0.279	Not Significant	1.294	0.731	Not Significant
Tornado	0.904	0.342	Not Significant	1.733	0.630	Not Significant

Factors	Income (X^2)	p-value	Interpretation	Civil Status (X^2)	p-value	Interpretation
Extremely Climatic Variability	0.097	0.756	Not Significant	5.052	0.168	Not Significant
Human-Induced Hazards	2.549	0.110	Not Significant	2.973	0.396	Not Significant
Overall	**2.669**	**0.102**	**Not Significant**	**1.848**	**0.605**	**Not Significant**

Residency and Type of Home as Determinants of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte. As reflected in Table 7, residency was significantly related to storm surge and thunderstorm while type of home was significantly related to landslide. Yet, in general, residency and type of home were not determinants of disaster preparedness among the respondents.

Table 7 The Demographic Determinants (Residency and Home) of Disaster Preparedness of the Respondents in the First District of Zamboanga del Norte

Factors	Residency (X^2)	p-value	Interpretation	Home (X^2)	p-value	Interpretation
Earthquake	0.996	0.910	Not Significant	1.788	0.181	Not Significant
Landslide	1.683	0.794	Not Significant	4.733	0.030	Significant
Tsunami	4.341	0.362	Not Significant	3.202	0.074	Not Significant
Volcanic Eruption	5.508	0.239	Not Significant	2.607	0.106	Not Significant
Tropical Cyclone	2.629	0.622	Not Significant	0.625	0.429	Not Significant
Storm Surge	11.727	0.020	Significant	0.974	0.324	Not Significant
Floods	1.906	0.753	Not Significant	0.039	0.844	Not Significant
Thunderstorm	10.147	0.038	Significant	3.649	0.056	Not Significant
Tornado	2.411	0.661	Not Significant	0.055	0.814	Not Significant
Extremely Climatic Variability	8.386	0.078	Not Significant	0.094	0.760	Not Significant
Human-Induced Hazards	2.990	0.560	Not Significant	1.498	0.221	Not Significant
Overall	**2.805**	**0.591**	**Not Significant**	**2.450**	**0.118**	**Not Significant**

Discussion

The natural disasters with high percentage as experienced by the respondents in the first district of Zamboanga del Norte for the past five years were earthquake, tropical cyclone, flood, and thunderstorm. In generally, however, this study found out that personal profile along age, educational level, occupation/position, monthly family income, civil status and residency as well as type of home of the respondents were not significant determinants of disaster preparedness. Only gender was noted to have

significant relationship with disaster preparedness with females who were more vulnerable and less prepared in the eventuality of disasters.

The present findings construed the fact that earthquake, tropical cyclone, flood, and thunderstorm that occur in the province remained largely under-reported, frequently because they began a number of years ago, and have become "chronic" or "long term". Yet, in their vulnerability, the affected populations are deserving of humanitarian aid. However, those involved in the more acute and sudden disasters that make a major impact in the media direct aid providers' efforts at enabling populations to build their capacity and decrease their vulnerability, thus, enhancing their preparedness for any future disasters.

Imbued with these experiences, this study recommends of paying careful regard to the vulnerability, capacities, and disaster preparedness plan for people affected by these disasters. Vulnerability, capacity, and disaster preparedness should be examined specifically in the context of food shortages and malnutrition with particular reference to the disasters experienced in the province. The United Nations International Strategy for Disaster Reduction(2004) emphasized that disaster preparedness includes activities and measures taken in advance to ensure effective response to the impact of hazards. The World Health Organization (WHO, 2002) also averred that the measures should ensure the organized mobilization of personnel, funds, equipment, and supplies within a safe environment for effective relief.

Literature Cited

Aldrich,N. and Benson, W. (2008).Preventing Chronic Disease: Public Health Research Practice and Policy.Center for Disease Control, Vol. 5, No.1.

Tierney, K.J.,Lindell, M.K., Perry, R.W. (2001). Facing the Unexpected: Disaster Preparedness and Response in the United States. USA: Joseph Henry Press

Fothergill, Alice and Peek, Lori A. (2004). Poverty and Disasters in the United States: A Review of Recent Sociological Findings. www.cdra.colostate.edu/data/sites/1/cdra-research/fothergill-peek2004poverty.pdf

Lindell,K. Michael (2011). Disaster Studies: www.sagepub.net/isa/resources/pdf. United Nations International Strategy for Disaster Reduction (2004).*Terminology: Basic terms of disaster risk reduction.* Retrieved June 1, 2014 from www.unisdr.org/eng/library/lib-terminology-eng-p.htm

World Health Organization (2002).Disasters and emergencies.Definitions Training Package.WHO/EHA PanAfrican Emergency Training Centre, Addis Ababa. Retrieved June 1, 2014 from www.who.int/disasters/repo/7656.pdf