

Influential Factor on Community Preparedness Level Against Natural Disasters

A Case of Tsunami Disaster Potency In Cilacap City

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1. Introduction

Tsunami is the most catastrophic disaster in Indonesia. From 1965 to 2006, tsunami hit the Indonesian coastline almost every two years and a half (Muhari et al, 2007). Figure 1 shows the location of Cilacap city that is one of the vulnerable locations against tsunami disaster. About 60 % of Indonesian populations live in coastal area and the areas always been used by the local community to sustain their live. This condition triggered many casualties and many damages when tsunami occurred. As an example, when tsunami hit Cilacap City on 17 July 2006, there were 157 casualties, 40.231.69 Million IDR loss. Many disaster mitigations have been applied in Indonesia to minimize the disaster impact, such as by calculating community preparedness. Community preparedness in a local place describes the readiness of the community to face probable disasters so that losses occur from those can be minimize and smooth recovery with an appropriate disaster mitigation locations can be planed comprehensively.

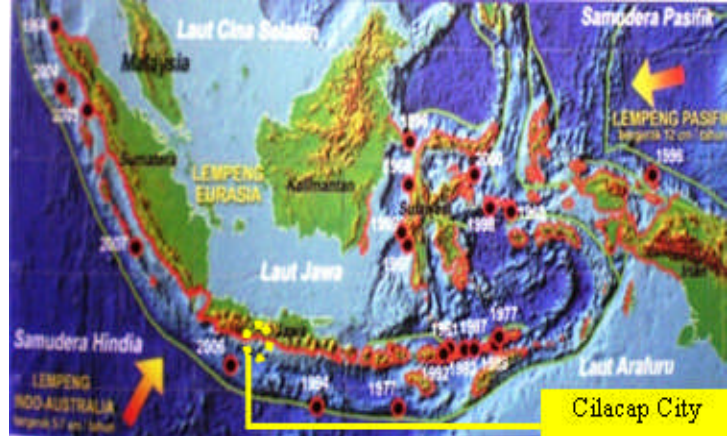


Figure 1. Tsunami event in Indonesia (Diposaptono & Budiman, 2008)

Based on background above, community preparedness is strongly related in disaster mitigation process. Thus this study aim to identify the factor that influence the community preparedness level in Cilacap City-Indonesia.

2. Study Location and Attribution of Respondent

Tegal Kamulyan, Cilacap and Sidakaya villages in Cilacap City are selected as study location. These study locations are on South Cilacap Sub District in Cilacap City. These three locations are on tsunami prone area (see Figure 1), and have high potency tsunami based on UNOSAT map year 2006 (see Figure 2). About 41180 residents live in Tegal Kamulyan, Cilacap and Sidakaya village, although these areas are very vulnerable against tsunami disaster. On the other hand, Tegal Kamulyan village known as fisheries centre supported with crucial infrastructure namely Cilacap Oceanic Fishing Port. Oil refinery and tourism facilities such as Pantai Teluk Penyus and Benteng Pendem are the important infrastructure in Cilacap village.



Figure 2. Study Location

The respondents were determined by using two stages random sampling technique. The first technique is a cluster area sampling method in order to determine the respondents who live in the tsunami potency area. The second technique is a random sampling method, in this stage the number of respondents were resulted. The number of respondent was 65 people in Tegal kamulyan, 58 people in Cilacap, and 53 people in Sidakaya village. The respondent's attribution on each village is reviewed in Table1.

Table 1. Attribution of Respondent

Village	Number (%) / Village										
	Gender		Education			Income			Living Distance		
	Male	Female	Elementary	Junior High School	Senior High School	< 1 million	1-3 million	> 3 million	< 500 m	500-1000 m	> 1000 m
Tegal Kamulyan	84.62	15.38	46.15	24.62	29.93	95.38	4.62	0.00	100	0.00	0.00
Cilacap	75.86	24.14	53.45	18.97	27.59	93.10	6.90	0.00	82.76	17.24	0.00
Sidakaya	71.70	28.30	26.42	30.19	43.30	90.57	9.43	0.00	28.30	71.70	0.00

3. Analysis and Result

A questionnaire was set and circulated on 3 villages shown in Figure 2. The questionnaire was consisted of variables such as respondent's attribution and preparedness level variables namely : knowledge and attitude, emergency planning, resource mobilization capacity and warning system against tsunami disaster. Accordingly, the respondent's attribution and the preparedness level variables were used to identify the influential factor on community preparedness level.

Based on statistical analysis technique formulated by Andrew F et al (Kastaman, 2004), the chi-square analysis is the appropriate analysis to identify the factor that influencing preparedness level of local people in facing disaster. The chi-square analysis, known as crosstab analysis, was run in SPSS (Statistical Product and Service Solution) program. By using the SPSS, the result of this analysis is showed on Table2 and Figure 3.

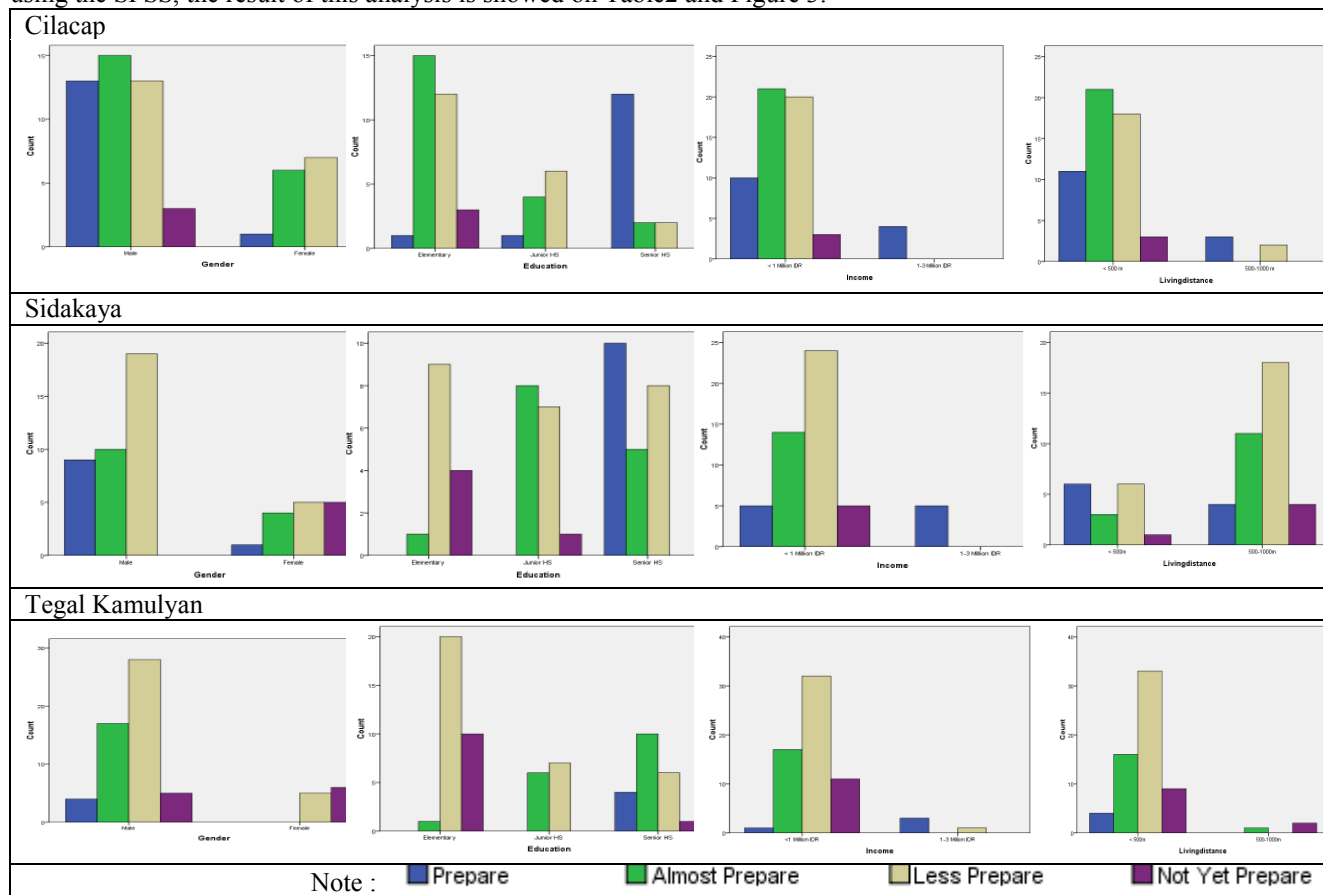


Figure 3. Result Analysis

Table 2. Result Analysis

Variable/Village	Pearson Chi-square Value/Village		
	Sidakaya	Tegal Kamulyan	Cilacap
Gender	0.02	0.01	0.01
Education Level	0.00	0.00	0.00
Income	0.00	0.00	0.04
Living Distance	0.152	0.092	0.156

Table 2 and Figure 3 explain the result of this study analysis. From Table 2, the Pearson chi-square value for all variables except living distance on each village shows the number below 0.05 as standard measure in chi-square analysis. It means that all variables except living distance have significant relation with preparedness level. From Figure 3, gender variable on three villages show that male is more prepare than female. For education level, people who graduate from high school tends to be more prepare than people who graduate from elementary school, it was proven in Sidakaya village that have 43.30 % senior high school respondent. For the income variable, three villages show that people with less income are more vulnerable. The Pearson chi-square value for living distance on three villages show the number more than 0.05, it represents that this variable is not have contribution to the preparedness level. It indicates that the living distance is not influence the people's awareness.

4. Conclusions

This study identified the influential factor that influence the level of community preparedness at Tegal Kamulyan, Cilacap and Sidakaya village. Gender, education level, and income are all variables that have significant relation to the preparedness level. The education level is the most important factor that influences the preparedness level especially for the village on where mitigation has not been applied yet. On the contrary, the living distance variable is not influence the preparedness level.

5. References

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