

The Effect of Socio-Ekonomik Status, Environmental Knowledge and Mitigation Attitude toward Disaster prevention Behavior of Community in the Coastal Area of Makassar City

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Abstract

This research purpose is to describe the socio-economic status, environmental knowledge; mitigation attitudes; and disaster prevention behavior in the coastal area of Makassar City, and to find out: the direct effect of socio-economic status to disaster prevention behavior; direct positive effect of environmental knowledge to disaster prevention behavior; direct positive effect of socio-economic status to bahavior; direct positive effect of environmental knowledge; to mitigation attitude; and direct positive effect of mitigation attitude to disaster prevention behavior in the coastal area Makassar city. Moreover sample in this research amounted to 127 respondents. Sampling techniques conducted by using Multi-Stage Proportional Random Sampling. The research design is Path Analysis on the effect of exogenous variables, namely Socio-Economic Status (X1), Environment Knowledge (X2); Intermediate variable, namely the attitude Mitigation (X3); and endogenous variables namely Disaster prevention Behavior (X4). Data collection techniques used in this research is observation, interviews, and questionnaires. Data analysis techniques using descriptive statistic and inferential statistic with the Path analysis. The results showed that, there is a positive and significant effect of socioeconomic status to the behavior of disaster prevention; there is a negative effect of the environment knowledgeto the disaster prevention behavior. There is a positive and significant effect of socioeconomic status to the mitigation attitudes. Which means that the higher the socioeconomic status, the higher also the mitigation attitude. There is no positive and significant effect of environmental knowledge to mitigation attitudes. This means that if environmental knowledge is higher, then the attitude of mitigation is lower. There is no positive and significant effect of

the mitigation attitude to the disaster prevention behavior. This means that if the mitigation attitude is higher then the disaster prevention behavior is lower.

Keywords: Socio-Economic Status, Environmental Knowledge, Attitude Mitigation, Disaster prevention Behavior

INTRODUCTION

The Law No. 24/2007 on Disaster prevention stated that the purpose of disaster prevention in Indonesia is to provide protection to the public from the threat of disaster, harmonize regulatory of legislation, ensure the implementation of disaster prevention in a planned, integrated, coordinated, and comprehensive, respecting the local culture, build participation and partnership of public and private sector, to encourage a spirit of mutual cooperation, solidarity, and generosity, as well as create peace in life society, nation, and state.

The Central Bureau of Statistics Makassar (2013)¹ states that the area of Makassar city covers 175.77 square km consist of 14 districts and is one of the coastal cities in Indonesia, which has a coastline of 32 km and includes 11 small islands with an area totaled 122 370 ha, or approximately 1.1% of its land area, it makes the fact Makassar is unique as coastal cities. This fact implies that the potential for disasters in coastal areas are very large.

Previous results of research conducted by Koddeng (2011)², revealed that the coastal area of Makassar has been degraded environmental capacity significantly and caused by the uncontrolled utilization less space for development activities and geomorphological conditions of coastal areas that are prone to disaster risk. The condition of the coastal areas if not saved and mitigated will cause damage to the coastal environment that will also impact on the surrounding area.

Preliminary results observations which revealed that disaster prevention has not been done systematically in the domains of disaster-specific and varied. Generally, the handling is carried out in an emergency, reactive when a disaster occurs, the data and information are minimal, have not done proactively to prevent and reduce the impact of disaster risk. The central government has issued policies to deal with disaster risk in the form of regulations and legislation, but the implementation has not been accompanied by adequate mechanisms, especially at the local level (regency/city).

Public participation in the city of Makassar as the results of previous research that has been conducted by Rizal (2014)³ shows that the phenomenon of government policy and the implementation of disaster prevention policies in the city of Makassar have these characteristics: 1) the awareness of natural disasters by the community who have not been optimal, indicated the high risks and consequences of disasters experienced by the community, 2) the function and positions of policy implementation of natural disaster prevention by the community has not materialized and reduce the burden of disaster risks; 3) the community participation is still very low in helping people affected by disasters, is still apathy assuming that disaster prevention is the task of the government; 4) the third party is not maximized in taking on the role of disaster prevention.

In addition, mitigation and disaster relief for this to be Top Down, whose management is centralized in the government. Community involvement in a participatory manner with the potential of knowledge, attitudes, and disaster prevention behaviors has not been used as a foothold in addressing the disaster in the city of Makassar still low. The study of potential for community of Makassar from the utilization of knowledge, attitudes, and their behavior against the background of socio-economic status into equity in moving potential of society (empowerment) to work together with the government cope with the disaster that frequently hit the community. Therefore, knowledge and attitudes of this mitigation can be implemented in the act of preparedness and willingness of the community to act and respond to natural disasters, non-natural and social.

Disaster prevention needs to be supported with environmental knowledge and mitigation attitudes as one of the risk reduction or the impact of disasters. The many variables that influence the mitigation attitudes and disaster prevention behavior of coastal communities in the city of Makassar and given the time constraints, the ability of researchers, and funding research, conducted restrictions on the problem, socio-economic status, environmental knowledge, attitudes mitigation is the independent variable, and the behavior of disaster prevention as a dependent variable.

This research purpose is to gain an overview of socio-economic status, environmental knowledge; mitigation attitudes; and disaster prevention behavior, and to find out: the direct effect of socio-economic status to disaster prevention behavior; direct positive effect of environmental knowledge to disaster prevention behavior; direct positive effect of socio-economic status to behavior; direct positive effect of environmental knowledge; to mitigation attitude; and direct positive effect of mitigation attitude to disaster prevention behavior in the coastal area Makassar city.

RESEARCH METHODS

The type of this research is *ex post facto* by using quantitative approach. *Ex post facto* research carried out by measurements of the things that have taken place in the context of the current time without manipulation of the variables studied (Arikunto, 2012)⁴. Based on data, facts, and information obtained, and can explain the condition of each of the variables studied, in order to know the effect of one variable to another variable. The research design is using Path Analysis on the effect of exogenous variables, namely Socio-Economic Status (X1), Environment Knowledge (X2); Intermediate variable, namely the attitude Mitigation (X3); and endogenous variables namely Disaster prevention Behavior (X4).

Based on the study design, the mathematical equation formulated as a structural equation. There are two structural equations in the model, can be seen below.

$$X_4 = \beta_{x_4 x_1} X_1 + \beta_{x_4 x_2} X_2 + \beta_{x_4 x_3} X_3 + \varepsilon$$

$$X_3 = \beta_{x_3 x_1} X_1 + \beta_{x_3 x_2} X_2 + \beta_{x_3 x_4} X_4 + \varepsilon$$

Source: Adapted from Tiro (2012)⁵

The research was conducted at the coastal area of Makassar by assigning four districts located in the coastal areas, namely the districts of Mariso, Tamalate, Ujung Tanah, and Tallo. Implementation of the research was conducted from February to May 2015. The population in this research is all the communities living along the coastal areas of the city of Makassar. Sample in this research amounted to 127 respondents. Sampling techniques conducted by using Multi-Stage Proportional Sampling. Data collection techniques used in this research is observation, interviews, and questionnaires.

The research instrument used was to collect descriptive and inferential data from respondents such as socioeconomic status, environmental knowledge, mitigation attitudes, and disaster prevention behaviors developed from Likert scale. Beads of research instruments developed by the researchers based on the dimensions and indicators measured variable.

RESEARCH RESULTS

Description of research data which will be presented at the exposure according to the data of each study variable includes variable data: Mitigation attitude (X3) which included Intermediate variables, Socio-Economic Status (X1), Environmental Sciences (X2), which includes exogenous variables. Scores of theoretical and empirical instruments of each of these variables, as follows:

Table 1: Empirical Score Instruments

Variable Instrumen		Σ Item	Score	
			Low	High
Socio-Economic Status	X ₁	21	72	103
Environmental Knowledge	X ₂	30	83	127
Mitigation Attitude	X ₃	28	100	140
Disaster Prevention Behavior	X ₄	36	96	180

Source: Results of Descriptive Analysis, July 2015.

After tabulation, then the data is described using descriptive statistics. Result includes the mean, median, mode (Mo), interval, minimum score, maximum score, range, standard deviation, variance Data

Table 2: Results of Descriptive Statistics

Indicators	Variables			
	Socio-Economic Status	Environmental Knowledge	Mitigation Attitude	Disaster Prevention Behavior
Mean	86.77	144.33	117.24	139.98
Median	87.00	106	115	135

Mode (Mo)	88.00	109	126	134
Interval	8	8	8	8
Minimum Score	72	83	100	96
Maximum Score	103	127	140	180
Range	31	44	40	84
Standard Deviation	6.27	7.98	10.11	18.07
Variance Data	39.29	63.75	102.15	326.46

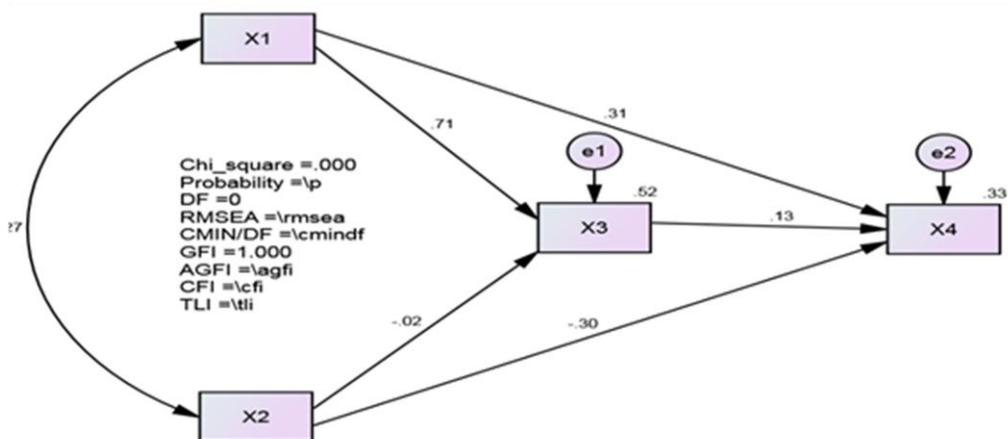


Figure 1: Path Analysis Diagram

The results of verification of the model as outlined in the path analysis diagram in Figure 1 is obtained indirect effect of socioeconomic status (X1)) to disaster prevention behavior (X4) through mitigation attitude (X3) as follows: $0.71 \times 0.13 = 0.092$ with total the effect of $0.31 + 0.092 = 0.402$. While the influence of environmental knowledge (X2) to disaster prevention behavior (X4) through mitigation attitude (X3), namely: $-0.02 + 0.13 = 0.11$. With a total effect of $-0.30 + 0.11 = -0.19$. Furthermore causal influence of socioeconomic status on knowledge of the environment and reverse the path coefficient value of 0.27.

The influence of socioeconomic status toward the behavior of the disaster preventionbehavior community in the coastal area of Makassar city, shows the estimation results are positive $\beta_{x4x1} = 0.903$ with $p = 0.004 < 0.05$ significant. This means that H_0 is rejected at the significance level $\alpha = 0.05$. So there is a positive and significant effect of socioeconomic status on the behavior of disaster prevention at significant level $\alpha = 0.05$. Which means that more of the higher socio-economic status of disaster prevention behavior.

Direct positive influence of environmental knowledge to the disaster prevention behaviorcommunity in the coastal city of Makassar, showing estimation results are

negative $\beta_{4 \times 2} = -0.677$ with $p = <0.001 <0.05$ significant. This means that H_0 is rejected at the significance level $\alpha = 0.05$. So there is a significant influence of the environment knowledge on the behavior of disaster prevention at significant level $\alpha = 0.05$. However, there is a negative and significant influence of the environment knowledge on the behavior of disaster prevention. Which means that the higher of environmental knowledge then, the lower of disaster prevention behavior.

The influence of socioeconomic status on the mitigation attitudes in coastal areas of the city of Makassar, shows the estimation results are positive $\beta_{3 \times 1} = 1.150$ with $p = <0.001 <0.05$ significant. This means that H_0 is rejected at the significance level $\alpha = 0.05$. So there is a positive and significant effect of socioeconomic status on the mitigation attitudes the significant level $\alpha = 0.05$. Which means that the higher of socioeconomic status, than the higher the mitigation attitude.

The influence of environmental knowledge on the mitigation attitudes in the coastal areas, shows the estimation results are positive $\beta_{3 \times 2} = -0.021$ with $p = <0.800 > 0.05$, which is not significant. This means that H_0 is accepted at significance level $\alpha = 0.05$. So there is no positive and significant influence of the environmental knowledge to attitudes mitigation at significant level $\alpha = 0.05$. This means that the higher the environmental knowledge, then the lower of the mitigation attitude.

The influence of mitigation attitudes towards behavior of disaster prevention in the coastal area shows the estimation results are positive $\beta_{4 \times 3} = 0.227$ with $p = 0.233 > 0.05$ were not significant. This means that H_0 is accepted at significance level $\alpha = 0.05$. So there is no positive and significant influence on the mitigation attitude towards the behavior of disaster prevention behavior at significant level $\alpha = 0.05$. This means that the higher of the mitigation attitude then the lower of disaster prevention behavior.

DISCUSSION

There are several indicators of socio-economic status that includes level of education, occupation, income, use of leisure time and social involvement are high effect on the behavior of disaster management. The higher socioeconomic status, the better and the higher the behavior of disasters. Overall needs are met, improving the level of welfare, social engagement and the use of leisure time at home and in the environment around it well can make someone behave in disaster prevention.

The indicators of environmental knowledge shows that (the terms, facts), habits, category, principle of the natural environment, social economics and community-made coastal city of Makassar influence the behavior of disaster management with indicators take precautions before a disaster occurs, pronged awareness of the impact of the disaster, current activity disaster prevention disaster impacts, conducting post-disaster to recover the impact of disasters that have occurred.

Environmental knowledge has high positive effects on the behavior of disaster prevention. Many factors cause better a person's behavior or positive, is not purely influenced by a person's knowledge. High environmental knowledge is not enough to make an impact on a person's behavior in disaster management. The knowledge

gained from studying their own, education, learning through the experience of others and ourselves.

Taylor; Peplau; Sears (2009)⁶ stated that, knowledge is very important domain variables to establish a person's actions (overt behavior). Many of our self-knowledge comes in form of socialization. Socialization forms the nucleus of our initial experience, and the frequency of this experience will eventually make the experience was internalized as an important aspect of self-concept. The knowledge variable has been accumulated from knowledge in a person, as well as knowledge of the environment that a person does not ensure better disaster management behavior. Self-awareness can be considered a person's behavior. In general, self-awareness leads people to evaluate their behavior based on the standards and the process of adjustment to meet the standards.

There is no direct and positive influence between environmental knowledge with attitude mitigation. Disclosed with this variable the indicators of environmental knowledge does not explicitly outline the indicators of disaster mitigation. The attitude mitigation is a specific thing concerning disaster prevention measures, and is a very important activity in disaster management, because this activity is an activity that is intended to anticipate that the impact can be reduced.

There are several factors influencing knowledge, were age. Factors age young people have memories that are stronger and higher creativity in seeking and knowing the unknown compared to the old age. Besides, it's ability to absorb new knowledge is more easily done on a young person because the brain to function optimally. The level of education will be helping the person to more easily grasp and understand the information. The higher a person's education also increased the level of understanding and proper decision-making.

According to Notoatmodjo (2010) 7, the knowledge is also influenced by the source of information. Information can be obtained from various sources that the mass media is one of the intermediaries used by the source to send a message to the message recipient. Mass media such as television, radio, newspapers, tabloids and others. Knowledge of a person can also be obtained from a friend. with the benefit of an idea for themselves, then someone will spread these ideas to others.

The adequate environmental knowledge does not have to generate a positive attitude especially the attitude is not an action or activity, but predisposes action behavior. An attitude of the individual self is not necessarily manifested in a real action, the necessary support and facilities factors. The attitude is a reaction that is still closed, can not be seen directly. Attitudes can only be interpreted in the visible behavior and attitudes can be decoded with a certain attitude toward the object followed by a tendency to take action in accordance with the object.

Furthermore Taylor; Peplau; and Sears (2009) states that one of the essential conditions for the birth of the attitude-behavior consistency is an attitude that must be strong and clear. A strong attitude generally stable, has a personal implications. Attitude is formed through direct experience. When we see the inconsistencies between attitudes and behavior, it is often due to the weak or ambivalent attitudes. Everything that contributes to the strong stance also tend to increase the consistency

of the attitude-behavior. One factor that contributes is the amount of information we have about the object attitude.

Mitigation attitude positively is not affect on the behavior of disaster prevention in the coastal area is one of the cases of various cases. Every time someone does the overt behavior, they can be influenced by the attitude and the situation around. When the pressure of the situation is quite strong, the attitude is not going to be the main determinant of behavior, especially his attitude has been weak since the beginning. The strong pressure of the situation sometimes someone show different attitudes towards the same attitude object in a variety of situations. Thus the strongest influence behavior is past behavior. People who never behave in certain ways sometimes will do it again, and the attitude is only one input in this process. Furthermore, habits and knowledge, behavior in the past will affect anything that someone would do in certain situations as raised by Albarracin and Wyer (2000)⁸.

Skinner (2013)⁹ states that behavior is a person's response or reaction to the stimulus or stimuli from the outside. Therefore, this behavior occurs via the process of the stimulus on the organism, and the organism then responded, then Skinner's theory is called the theory of "S-O-R" or Stimulus - Organism - Response. The accumulation of socio-economic status, environmental knowledge, attitudes and behaviors disaster mitigation can be formulated in the disaster management cycle consisting of components of mitigation, preparedness, response, recovery needs to be done as a whole.

CONCLUSION

There is a positive and significant effect of socioeconomic status to the behavior of disaster prevention (significance level $\alpha = 0.05$); there is a negative effect of the environment knowledge to the disaster prevention behavior (significant level $\alpha = 0.05$). These results indicate that the environmental knowledge is higher, then the disaster prevention behavior is lower.

There is a positive and significant effect of socioeconomic status to the mitigation attitudes at the significant level $\alpha = 0.05$. Which means that the higher the socioeconomic status, the higher also the mitigation attitude.

There is no positive and significant effect of environmental knowledge to mitigation attitudes at significant level $\alpha = 0.05$. This means that if environmental knowledge is higher, then the attitude of mitigation is lower.

There is no positive and significant effect of the mitigation attitude to the disaster prevention behavior at significant level $\alpha = 0.05$. This means that if the mitigation attitude is higher then the disaster prevention behavior is lower.

ACKNOWLEDGMENTS

Thanks to Rector of Makassar State University, Director of Post Graduate Program, Head of Doctoral Program Population and Environmental Education, who has provided support this research. Thanks to Government of South Sulawesi on the

support means and giving permission to conduct research in the area of the city of Makassar.

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