

INFLUENCE OF THE POLLUTION KNOWLEDGE, ENVIRONMENTAL ATTITUDES AND LOCUS OF CONTROL TO THE SOCIETY BEHAVIOR IN MAINTAINING THE SUSTAINABLE SETTLEMENTS ENVIRONMENTAL IN SIDENRENG LAKE REGION OF SOUTH SULAWESI, INDONESIA

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ABSTRACT

This study is aimed to determine the effect individually or jointly of the environmental pollution knowledge, environmental attitudes and locus of control on the behavior of the people to maintain settlements environment in a sustainable manner in the area of Lake Sidenreng South Sulawesi. This research is classified survey-correlational. The independent variables are: knowledge of environmental pollution (X_1), environmental attitudes (X_2) and locus of control (X_3) and the dependent variable is the behavior of the community in maintaining settlements environment sustainably (Y). Locations were selected intentionally (purposive sampling) that one village of each district which is close to Lake Region Sidenreng. Respondents as many as 150 householder are determined through systematic random sampling method. Data were analyzed with descriptive and inferential statistics (simple and multiple regression). The results showed that people's behavior in nurturing neighborhoods, environmental pollution knowledge, environment attitudes and locus of control in the area of Lake Sidenreng, respectively is moderate. Knowledge of environmental pollution, environmental attitudes and locus of control influence positively and contribute real either individually or jointly on the behavior nurturing residential environment in a sustainable manner in the area of Lake Sidenreng of South Sulawesi.

KEY WORDS : Behavior, Knowledge of pollution, Environmental attitudes, and the locus of control.

INTRODUCTION

Settlement is an important aspect for people undertaking various interactions to perpetuate life. Settlement is a built environment that is familiar to humans. There are two types of environment in the relationship between humans and the physical conditions of their environment (Sarwono, 1995). The environment, namely: (1) an environment that is already familiar with humans, (2) an environment that is still alien to humans. Further Sarwono (1995) states that a familiar environment tends to be maintained and the foreign environment tends to be avoided by humans.

Law No. 32 of 2009 on the Protection and

Management of the environment stated that there needs to be a systematic effort and integrated to preserve the environment and prevent pollution or damage to the environment that includes planning, utilization, control, maintenance, supervision, and enforcement. To preserve the environment as well as settlements environment in the Lake Region Sidenreng South Sulawesi required responsible behavior of humans in it. So that people can behave in preserving the environment requires knowledge and a good attitude, and locus of control.

Research on the effects of pollution knowledge, environmental attitudes and behavior of society locus of control to perpetually maintain sustainable housing environment in the the sidenreng lake area

has never been done. Preliminary studies, were conducted in July 2014 in settlements around the lake Sidenreng found that the physical conditions of settlement such as landfills, household toilets, and sewer did not reflect a clean and healthy environment. It may happen because of knowledge of pollution, environmental attitudes, and the locus of control is not functioning properly to shape people's behavior in maintaining the housing environment in a sustainable manner.

Research of Ardi (2015) about the behavior of upland farmers in improving the environmental quality in the District Soppeng concluded as follows: (1) the behavior of farmers improve the quality of the environment is low; (2) knowledge of the environment is also low; (3) attitudes towards the environment tends to be negative; (4) the environmental knowledge and attitudes towards the environment positively affects the behavior of upland farmers in improving environmental quality. Research of Amir (2015) about the behavior of people preserving neighborhoods in the Watershed Walanae, concluded that people's behavior to preserve neighborhoods classified as moderate; knowledge of environmental pollution is low; motivation to maintain an environment classified as moderate; and knowledge of environmental pollution and maintain motivation individually and jointly make a significant contribution to the improvement of people's behavior to preserve neighborhoods in Watershed Walanae. Based on the facts on the field and some research results presented above, this research is very important to obtain data on the environmental pollution knowledge, attitudes towards the environment, and the locus of control of the people who dwelt around the lake region Sidenreng. This data is the basic data for the development of people's behavior in maintaining the environment around the lake Sidenreng in the future. This data is also the basis for the determination of policy on people's behavior related to the environment.

Research Methods

Based on the area coverage, the research classified as a surveys study and based on the relationship between variables the research classified correlational study. Research was conducted on community settlement in the area of lake Sidenreng (Suburb of Soppeng, Wajo and Sidrap District). Determination of Location research using purposive sampling method that is one village in each district.

Thus there are three villages as research location.

Respondents in this study of 150 households, which was respectively 50 families in each village. Respondents were selected by systematic random sampling method. The dependent variable (Y) is the behavior of people in maintain settlements environment in a sustainable manner in the area of Lake Sidenreng and the independent variable is the knowledge of environmental pollution (X_1); environmental attitude (X_2); and Locus of control (X_3).

The research instruments consist of: (1) questionnaires were used to collect data on people's behavior, environmental attitude and locus of control; (2) test sheet was used to collect data about knowledge of environmental pollution. The data obtained were analyzed using descriptive statistics and inferential statistical analysis. The model inferential analysis is a simple and multiple regression.

RESULTS AND DISCUSSION

Description of independent and dependent variables

The results of the descriptive statistical analysis of variables as illustrated in Fig. 1.

Based on the picture above, stated that the knowledge of environmental pollution (PK), environmental attitudes (EA), locus of control (LC) and behavior to preserve the environment (ENB), in middle category (M) respectively, with the frequency value in a row 79%, 82%, 82% and 82%. While the average value of the four variables 8.87; 49.46; 52.60 and 52.27 respectively. In Figure 1 also

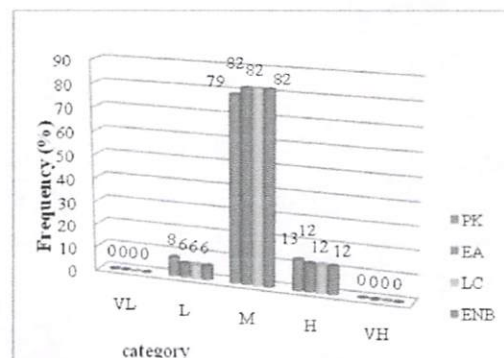


Fig. 1. Distribution of frequencies for each category
Description:

PK =Pollution Knowledge; EA = Environmental Attitude
LC = Locus of Control; ENB=Environmental Nuturing Behavior
VL = Very Low; L=Low; M=Medium; H=High; VH=Very High

shows that there are no people who have knowledge of environmental pollution, environmental attitudes and behavior to preserve the environment in the category of very low and very high.

The results of the analysis of influence of independent variables on the dependent variable

To determine the effect of environmental pollution knowledge (X1), environmental attitudes (X2) and Locus of Control (X3) to maintain people’s behavior in a sustainable housing environment (Y) then the following is presented a summary of the results of the regression analysis as follows:

Effect of environmental pollution knowledge toward the people’s behavior in maintaining sustainable settlement environment

Based on table 1 shows that the value of $F = 0.000 < \alpha = 0.05$, this means knowledge of environmental pollution affect the behavior of people maintain settlements environment in a sustainable manner in the region of Lake Sidenreng. The table also shows that $R^2 = 0.989$, this shows that the effects of environmental pollution knowledge of the behavior of people maintain settlements environment in a sustainable manner in the region of Lake Sidenreng amounted to 98.9%. The regression coefficient of the knowledge of environmental pollution on people’s behavior to preserve the sustainable settlement environment in the area of Lake Sidenreng is 0.994 with significance $t = 0,000 < \alpha = 0.05$. Therefore, it is concluded that the contribution of knowledge of pollution on people’s behavior to preserve the sustainable settlement environment in the area of Lake Sidenreng at 0.994. Thus efforts to improve knowledge of environmental pollution as much as one unit, then the behavior of people maintain settlements environment in a sustainable manner in the region of Lake Sidenreng will increase by 0.994.

The society knowledge of pollution in the region of Lake Sidenreng are in the moderate category. The knowledge very significant influence on people’s

behavior to preserve the sustainable settlement environment in the area of Lake Sidenreng. Contribution is very significant. This finding is supported by a model of environmental behavior (Swan and Stepp, 1974). Rauf (2016) states that the environment knowledge of the communities in the watershed Walenae still needs to be improved, especially on the aspects of comprehension, application, analysis, synthesis, and evaluation of the environment. Rauf (2015) describe that an Increase in environmental knowledge by one unit will lead to improved behavior in providing family latrines and maintaining drainage of settlements of 0.997.

The results of descriptive statistical analysis showed that knowledge of environmental pollution are in the medium category. This means that society knows that environmental pollution may cause the negative impacts on the environment, including humans. The knowledge of environmental pollution will affect the behavior of maintaining neighborhoods. Settlement environmental pollution by organic chemicals and an organic can degrade the quality of neighborhoods. The knowledge of pollution will form the behavior of maintaining neighborhoods. Hines *et al.*, (2010) says that when this relationship (knowledge and behavior) appears to be stronger, it is an ecological knowledge about behavior rather than factual knowledge about the environment that is related to ecological behavior. Furthermore Notoatmodjo (2007) explains that knowledge is very important domain in the form of one’s actions. Therefore, to improve people’s behavior to preserve the sustainable settlement environment in the area of Lake Sidenreng, there should be education about environmental pollution.

Effect of Environmental Attitudes Toward the people’s behavior in maintaining sustainable settlement environment in the area of Lake Sidenreng

According to the Table 1 shows that a significant $F = 0.000 < \alpha = 0.05$, this means environmental attitudes

Table 1. Summary of Regression Analysis

No	Effect of	R ²	regression coefficient	F	Sig	T	Sig
1	X ₁ to Y	0,989	0,994	129,18	0,00	49,7	0,00
2	X ₂ to Y	0,996	0,994	138,97	0,00	9,73	0,00
3	X ₃ to Y	0,79	0,79	131,67	0,00	10,83	0,00
4	X ₁ , X ₂ , X ₃ to Y	0,787	0,996	323,99	0,00	X ₁ 17,63 X ₂ 16,94 X ₃ 16,20	0,00 0,00 0,00

influence the behavior of people maintain a residential neighborhood in a sustainable manner in the region of Lake Sidenreng. Regression analysis showed that $R^2 = 0,996$, this indicates that the influence of the environment attitudes on the behavior of public to maintain a sustainable settlements environmental in the region of Lake Sidenreng of 99,6%. While based on the value of regression coefficient 0.994 with a significance $t = 0,000 < \alpha = 0.05$. This means that the contribution of environmental attitudes toward the public behavior to maintain a sustainable settlements environmental in the region of Lake Sidenreng at 0.994. Thus every effort to improve environmental attitudes as much as one unit then the behavior of people to maintain a residential neighborhood in a sustainable manner in the region of Lake Sidenreng will increase by 0.994.

The environmental attitude of the community in the area of Lake Sidenreng are in moderate category. The environmental attitude very significant influence on people's behavior to preserve a sustainable settlement environment in the area of Lake Sidenreng. This finding is consistent with a model of planned behavior theory (Ajzen, 1991) which states that one of the factors that determine the behavior is attitude. The environmental attitude is positively associated with responsible environmental behavior (Tarrant and Cordell, 1997; Schultz and Zelezny, 1998). Attitude a favorable or unfavorable evaluative reaction toward something or someone, exhibited in one's beliefs, feelings, or behavior intended. Darnton (2008) states that in the linear models of pro-environmental behavior [Reproduced from Kolmuss and Agyeman, 2002], information generates knowledge, the which shapes attitudes, the which leads to behavior. The results showed that the attitude of the environment affects the behavior to maintain neighborhoods. The contribution of the environmental attitudes toward behavior to maintain an environment of 0.994.

Azwar (2012) states that the attitude consists of three components namely: (1) a cognitive component that contains a person's belief about what is true and correct to the attitude object, (2) the affective component-related emotional problems a person against an object attitude, (3) conative or behavioral component that shows a person's tendency to behave towards the attitude object faces. In connection with this study, it can be stated that the people around the area of Lake Sidenreng know and believe that the waste as the object of

attitude can give a negative impact on the environment, including humans. The existence of garbage around the settlement cause discomfort so that people tend to act for positive behavior. The tendency to act ultimately leads people to act real in preserving our environment through the provision of residential trash, garbage disposal in the trash and recycling bins.

The results showed that the contribution of environmental attitudes toward behavior to maintain an environment of 1.922. Therefore, to improve people's behavior in a sustainable settlement to preserve the environment in the area of Lake Sidenreng, it is necessary to organize the attitude towards the environment by providing the pilot a good environment through 3R approach (Reduce, Reuse and Recycle).

The influence of Locus of Control on the people's behavior to maintain sustainable settlements Environmental in the area of Lake Sidenreng

Based on table 1 shows that a significant $F = 0.000 < \alpha = 0.05$, this means the locus of control influence the behavior of people to maintain housing environment in a sustainable manner in the region of Lake Sidenreng. The table also shows that $R^2 = 0.79$, this indicates that the influence of locus of control on the behavior of people maintain housing environment in a sustainable manner in the region of Lake Sidenreng amounted to 79.0%. The regression coefficient of the locus of control on the behavior of people maintain housing environment in a sustainable manner in the region of Lake Sidenreng is 0.79 with a significance $t = 0,000 < \alpha = 0.05$. Therefore, it is concluded that the contribution of locus of control on the behavior of people maintain a residential neighborhood in a sustainable manner in the region of Lake Sidenreng at 0.790. Thus efforts to improve locus of control as one unit, then the behavior of people maintain housing environment in a sustainable manner in the region of Lake Sidenreng will increase by 0.790.

Locus of control of society in the area of Lake Sidenreng are in moderate category. Locus of control are very significant influence the people's behavior to preserve the sustainable settlement environment in the area of Lake Sidenreng. Contribution is very significant. This finding is supported by a model of environmental behavior (Hines *et al.*, 2010), which states that one of the factors that affect the behavior is the locus of control. Therefore, to improve people's behavior to preserve the sustainable

settlement environment in the area of Lake Sidenreng, it is necessary to briefing and the establishment of Locus of control.

Expression of close relationship between the environment maintenance actions performed by community with the convenience gained. Locus of control is the character of a person. Jusuf (2004) suggested that the LOC is a character that indicates the degree of how much a person is expressing closeness of the relationship between actions performed with acceptable results. Is a sense of comfort in residential neighborhoods as a result of actions taken by the community itself or by forces beyond control himself. The research instrument used in this study contains questions relating to LOC internal and external. The results showed that the LOC significantly affect the behavior of maintaining neighborhoods. Rotter (1966) suggested that humans have a second locus of control, both external and internal. Ganster and Fusilier (1989) concluded that control was a vital element of well-being. In addition, management approaches that empower employees by giving them more control have been advocated as both effective and humane (Lawler, Mohrman and Ledford, 1995). Grob (2000) notes that the caused Often Because stress is an individual perceives the situation as beyond his or her coping abilities; with ongoing stress having a negative effect on subjective well-being. Someone with an internal locus of control who, who Believes that the situation is within his or her control, may find the same stimulating situation. Conditions of slum neighborhoods cause stress on the community that affect people's behavior in maintaining neighborhoods.

Effect of the environmental pollution knowledge, environmental attitudes and Locus of Control to people's behavior to maintain the sustainable settlements environmental in the area of Lake Sidenreng

Based on table 1 shows that a significant $F = 0.000 < \alpha = 0.05$, this means knowledge of environmental pollution, environmental attitudes, and the locus of control jointly influence the people's behavior to maintain a sustainable settlement environment in the area of Lake Sidenreng. In table 1 also shows that the value of $R^2 = 0.787$, this shows that the jointly effect of knowledge of environmental pollution, environmental attitudes, and the locus of control toward the behavior of people to maintain a sustainable neighborhood in the region of Lake

Sidenreng amounted to 78.7%.

The Contributions knowledge of pollution to maintain behavior in a sustainable urban environment in the region of Lake Sidenreng with regard to environmental attitudes and locus of control amounted to 2,321 with significance $t = 0,000 < \alpha = 0.005$. This figure shows that any efforts to improve knowledge of the pollution by one unit, then the behavior of the community maintain a sustainable neighborhood in the region of Lake Sidenreng will increase by 2,321.

The contribution of the environmental attitudes towards nurturing behavior in a sustainable urban environment in the region of Lake Sidenreng with regard to the knowledge of environment pollution and locus of control amounted to 1.922 with a significance $t = 0,000 < \alpha = 0.005$. This figure shows that any effort to increase the environmental attitudes as much as one unit, then the behavior of the community to maintain a sustainable neighborhood in the region of Lake Sidenreng will increase by 1.922.

The contributions locus of control to the behavior to maintain a sustainable urban environment in the region of Lake Sidenreng with regard to the knowledge of environment pollution and environment attitude amounted to 0.881 with a significance $t = 0,000 < \alpha = 0.005$. This figure shows that any efforts to increase the locus of control as one unit, then the behavior of the community to maintain a sustainable neighborhood in the region of Lake Sidenreng will increase by 0.881.

The knowledge of pollution, environmental attitudes, and the locus of control influence either individually or jointly toward the behavior of the community in maintaining residential neighborhood in a sustainable manner in the region of Lake Sidenreng. Therefore, to improve the behavior of the community in maintaining the neighborhood, then the knowledge of pollution, environmental attitudes, and the locus of control must be nurtured through education, training, and giving examples. The findings supported by Hungerford, HR, & Volk, TL, (1991), that responsible environmental behavior is influenced by the knowledge, attitudes, locus of control. This finding is also supported by Sarwono (1995) which says humans can be educated, trained, taught myself to be able to behave or adjust to the new environment. This finding is also supported by (Hines *et al.*, 2010) which states the various factors that influence environmental behavior, such as knowledge, attitudes, and the locus of control.

Annex (2002) suggests that variables or precursors to behavior change consist of attitudes, knowledge, self-efficacy, locus of control, and intent. Mulyadi (2011) found that responsible environmental behavior of farmers in Soppeng influenced by environmental knowledge, local wisdom, locus of control and motivation farming.

CONCLUSION

Based on the discussion, we conclude as follows:

1. Knowledge of environment pollution, environmental attitudes, locus of control and the people's behavior to maintain a sustainable settlement environmental in the region of Lake Sidenreng in moderate category.
2. Knowledge of environmental pollution, environmental attitudes, and the locus of control have a significant effect and a real contribution, either individually or jointly on the behavior of the community in maintaining residential neighborhood in a sustainable manner in the region of Lake Sidenreng.

Recommendation

Based on the conclusions suggested as follows:

1. To increase public knowledge about environmental pollution in the region of Lake Sidenreng South Sulawesi then be given counseling and training of knowledge related to environment and pollution.
2. To improve the environmental attitudes of people in the region of Lake Sidenreng South Sulawesi, the need to improve the frequency of counseling and training on knowledge of the environment and pollution.
3. To form the locus of control society in the area of Lake Sidenreng South Sulawesi it should be given a pilot of a good environment.
4. To improve the behavior of the public in maintaining a residential neighborhood in a sustainable manner in the region of Lake Sidenreng South Sulawesi, the immediate counseling, training and guidance on the knowledge of pollution, environmental attitudes and locus of control.

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