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People's behavior in maintaining residential environment and some factors affecting in the Walenae watershed of south Sulawesi province, Indonesia

Bakhrani Rauf

State University of Makassar, Indonesia

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ABSTRACT

This study aims to determine: (a) the behavior of the environmental maintenance, environmental knowledge, attitudes towards the environment, and motivation of community in maintain Walenae Watershed of South Sulawesi Province; (b) the effect of environmental knowledge, attitudes towards the environment, and motivation to maintain an environment both individually and simultaneously toward the public behavior to maintain the neighborhoods of the Walenae watershed. The independent variables are: (a) knowledge of the environment (X1), the attitude towards the environment (X2), and the motivation to maintain an environment (X3). The dependent variable is the behavior of the environmental maintenance (Y). The study location is in the Walenae watershed namely Soppeng, Wajo, and Bone District. The research areas selected by purposive sampling consist of one village of each district near the Walenae watershed. A total of 200 households as respondents which were selected by systematic random sampling of the three sample areas. Data were analyzed by descriptive and inferential statistical. Inferential analysis are a simple and multiple regression. The results showed that all of variables are in moderate category. Environmental knowledge (X1), the attitude towards the environment (X2), and the motivation to maintain an environment (X3) give the positive effect and significant contribution either individually or simultaneously on the people's behavior to maintain the environment (Y) in the Walenae watershed of

South Sulawesi Province.

Key words : Behavior, Environmental knowledge, Environmental attitudes, Motivation to maintain the environment.

Introduction

The Law of Republic of Indonesia Number 32, 2009 about the Protection and Management of the environment stated that there needs to be the systematic and integrated effort to preserve the function of the environment and to prevent the pollution or the environmental damage which includes planning, utilization, control, maintenance, monitoring, and law enforcement. The Law of the Environmental Management especially in the article 3 states that the en-

vironmental management organized by the principle of responsibility, sustainability, and benefit with aims to realize the principle of sustainable development in order to build a complete Indonesian human and the development of Indonesian society that faithful and devoted to God Almighty. Salim (1985) states that development is a continuous process and continuous impact on the population and the environment, therefore it is necessary harmony between population development and environmental development in order to create the conducive

Corresponding author's email:

bakhraniraufteknik@yahoo.com;

bakhranirauf192@yahoo.com;

bakhranirauf192@gmail.com (Bakhrani Rauf, State University of Makassar, Indonesia)

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conditions to the sustainable development process.

Tukiyat (2009) states that the behavior is a result of one's

actions which are continuous and have continuous trend that is made on the situation and the conditions encountered. Hunggerfort and Volk (1990) states that behavior is influenced by several factors, namely: (a), knowledge of the environment, (b) attitude, (c) motivation, (d) socio-economic factors and so forth. Kolmuss and Agyemen (2002) that promoted pro-environmental behavior is influenced by the attitude of the environment, while environmental attitudes are influenced by environmental knowledge. Quinn and Burbach (2008) suggested that environmental attitudes positively associated with favorable environmental behavior. Pruneau, et al. (2003) suggested that people have good information, they will become more aware of environmental issues and consequently more motivated to act responsibly towards the environment. Winardi (2011) explains that in general the behavior motivated to achieve certain goals. Herath (2010) suggested that intrinsic and extrinsic motivation reinforce attitudes on behavior. Furthermore Sarwono (1992) states that human nature is capable of learning from experience and therefore changes in human behavior can only be done gradually in accordance with the new environment.

Settlements or housing is a basic need of human therefore housing is the most important aspect of human life to continue its activities far future. The residential environment in which there are many housing as well as in Walenae watershed which is the built environment of the communities living in that place. Settlements in Walenae watershed consists of several districts, namely: Soppeng, Wajo, and Bone County.

A survey of the Walenae watershed settlement in South Sulawesi Province at January 2014, found that: (a) household waste in an urban environment has not been fully handled properly, (b) Drainage settlement has not been functioning as expected by the perinsip-perinsip of environmental sustainability. It was probably caused by the behavior of community in maintain the sustainable urban environment still low.

Based on discussions with some public figures show that:

(1) Many residents lack of attention to waste management,

(b) the behavior to maintain the settlement drainage is still far from what is expected by the creation of a comfortable environment far future. Possible causes are: (a) Lack of knowledge

about environment, (b) the public's attitude toward the residential environment less positive, (c) motivation to maintain neighborhoods is still low.

The problem of this study are: (a) How does the behavior of communities to maintain the environment, environmental knowledge, attitudes towards the environment, and motivation to maintain the Walenae watershed in South Sulawesi Province?, (b) Is the environmental knowledge, attitudes towards the environment and motivation to preserve the environment, either individually and affect to the people's behavior to maintain the environment in the Walenae watershed of South Sulawesi Province?. Thus the purpose of this research are: (a) To determine the people's behavior to maintain the environment, environmental knowledge, attitudes towards the environment, and motivation to maintain Walenae watershed in South Sulawesi Province, (b) To determine the influence of environmental knowledge, attitudes towards the environment and motivation to maintain environment, either individually or simultaneously to tire people's behavior to maintain the environment in Walenae watershed of South Sulawesi Province.

Materials and Method

Based on the scope, This research categorized as survey, based on tire availability of data in tire field, this study classified as expose facto and based on data analysis, this research categorized as correlational research. The study area is a Walenae watershed in South Sulawesi Province which includes Soppeng, Wajo and Bone district. Each district selected one village by purposive sampling method that village near the watershed Walenae. Respondents study of 200 households were selected by systematic random sampling method of the three sample areas. The independent variables in this study are: (a) knowledge of the environment (XI), (b) attitude towards the environment

(X2), and (3) the motivation to maintain the environment (X3). While the dependent variable is the people's behavior to maintain neighborhoods (Y). The influence of independent variables to the dependent variable are presented in Fig. 1.

The instruments used to collect data are: (a) provide a test of knowledge, (b) provide a questionnaire of attitude, (c) provide a questionnaire of motivation, (d) provide a questionnaire of behavior., The Data were analyzed by deskereptive and inferential

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Fig. 1. The influence of independent variables to the dependent variable Caption:

Y = The people's behavior to maintain neighborhoods XI = environmental knowledge X2 = attitude toward the environment X3 = Motivation to maintain environment statistical. The analysis model is a simple and multiple regression.

Results and Discussion

Description of The people's behavior to maintain the neighborhoods

To determine the level of people's behavior in environmental management in the watershed Walenae South Sulawesi Province; then the following are presented the results of descriptive statistical analysis (frequency distribution) in Table 1.

Table 1. Results of descriptive statistical analysis of the People's behavior to manintain the neighborhoods

Based on the analysis results obtained an average score of 45.54 from 14 items of statements about the people's behavior to maintain the neighborhoods, where the value (score) the statement is 1 - 5. The minimum scores of field data of 20.00 and maximum score of 70.00. To determine

the level of the people's behavior to maintain tire neighborhoods in the Walenae watershed of South Sulawesi Province; then the following arc presented the results of de-scriptive statistical analysis (frequency distribution) in Table 2.

Based on the frequency distribution in Table 2 obtained a score of 36.6 to 47.8 in moderate category. While the results of the deskreptive statistical analy-sis (Table 1), the average was 45.54, this score in moderate category.

Therefore, it can be concluded that tire people's behavior to maintain the neighbor-hoods in the moderate category.

The peoples have done but inadequate environmental management on aspects of management of environmental, drain-age maintenance, and maintenance of open space.

Description of Environmental Knowledge

The environmental knowledge of society in the Walenae watershed of South Sulawesi Province were analyzed descriptively and displayed in Table 3.

Table 3. Results of descriptive statistical analysis of envi-ronmental knowledge

Statistical value

No Index value

8,55 16,00 3,00 3,13

1 Average

2 Maximum

3 Minimum

4 Standard Deviation

No Index value

1 Average

2 Maximum

3 Minimum

4 Standard Deviation

Statistical value

45,54 70,00 20,00 11,20

Based on the analysis results obtained an average score of 8.55 from 17 of the questions about the en-vironment

knowledge, where the value of correct answer of each question given a score of 1 and a wrong answer given a score of 0. The minimum

Table 2. The frequency Distribution of People's Behavior to Maintain Neighborhoods

No

Category

Score

Frequency

1	Very Hight	59,2 - 70,0	24
2	Hight	47,9 - 59,1	57
3	Moderate	36,6 - 47,8	88
4	Low	25,3 - 36,5	20
5	Very Low	14,0 -25,2	11
Total		200	100

Percentage (%) % cumulative

12,0	12,0
28,5	40,5
44,0	84,5
10,0	94,5
5,50	100

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Table 4. Frequency distributions of the environmental knowledge

No	Category	Score	Frequency	Percentage (%)	% Cumulative
1	Very Hight	13,6 -17,0	15	7,5	7,5
2	Hight	10,2 - 13,5	40	20	27,5
3	Moderate	6,8 -10,1	SI 40,5	67,5	
4	Low	3,4 - 6,7	60	30	97,5
5	Very Low	0,0 - 3,3	4	2	100

Total 60 100

score is 3.00 and the maximum score is 16.00. To determine the level of the environmental knowledge in management of the Walenae watershed of South Sulawesi Province; then the following was presented the results of descriptive statistical analysis (frequency distribution) in Table 4.

Based on the frequency distribution in Table 4 obtained a score of 6.8 to 10.1 in moderate category. While the results of the descriptive statistical analysis (Table 3), the average score is 8.55, this score in moderate category.

Therefore, it can be concluded that the environment knowledge of the communities in the category moderate.

The communities has the environment knowledge but not enough to manage the residential neighborhood as it should be. Therefore the environment knowledge of communities needs to be coupled through counseling.

Description of Attitudes to the Environment

People attitudes toward the environment in the Walenae watershed of South Sulawesi Province were analyzed descriptively and presented in Table 5.

Table 5. Results of descriptive statistical analysis of the environmental attitudes

Index value

No

Statistical value

- 1 Average 43,12
- 2 Maximum 66,00
- 3 Minimum 20,00
- 4 Standard Deviation 10,59

Based on the analysis results obtained an average score of 43.12 from 14 items of statements about attitudes towards the environment, where the score the statement is 1 - 5. The minimum and maximum score is 20.00 and 66.00 respectively. To determine the level of attitude towards the environment in the Walenae watershed of South Sulawesi Province-then the following was presented the results of descriptive statistical analysis (frequency distribution) in

Table 6.

Based on the frequency distribution in Table 6 obtained a score of 36.6 to 47.8 in moderate category. While the results of the statistical analysis deskriptif (Table 5) the average value or the average score was 43.12 this score in middle category. Therefore, it can be concluded that the communities attitude towards the environment in the Walenae watershed of South Sulawesi Province was moderate category. The communities tendens to have a positive attitude, but still needs to be strengthened.

Therefore, to improve attitudes to becomes more positive, it is necessary to provide guidance to public continuously.

Description of the Motivation to Maintain Environment

The motivation of people to maintain an environment in watershed Walenac South Sulawesi Province were analyzed descriptively and shown in Table 7.

Based on the analysis results obtained an average score of 40.04 from 14 items statement of motivation

Table 6. The Frequency Distribution of the attitude towards the environment

No

Category

1 Very Hight

2 Hight

3 Moderate

4 Low

5 Very Low

Total

Frequency

Score

Persentage (%) % Cumulative

59,2 - 70 24 12 12

47,9 - 59,1 26 13 25

36,6 - 47,8 94 47 72

25,3 - 36,5 42 21 93

14 - 25,2 14 7 100
200 100

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Table 7. Results of descriptive statistical analysis of motivation to maintain an environment

Index Value

No

Statistical Value

- 1 Average 40,04
- 2 Maximum 65,00
- 3 Minimum 21,00
- 4 Standard Deviation 10,59

to maintain an environment, where the score the statement is 1 - 5. The minimum and a maximum score of field data is 21.00 and 67.00 respectively. To determine the level of motivation in the environmental management in the Walenae watershed of South Sulawesi Province, the following are presented the results of descriptive statistical analysis (frequency distribution) in Table 8.

Based on the frequency distribution in Table 8 obtained a score of 36.6 to 47.8 in mode category. While the results of the deskreptive statistical analysis (Tabic 7), the average was 40.04 and this score in moderate category. Therefore, it can be concluded that the communities motivation to maintain envi-ronment in Walenae watershed of South Sulawesi province was moderate category. The communities

have both of the intrinsic and extrinsic motivation, but not enough to maintain the environment residential. Therefore, this motivation needs to be improved continuously by means of a good of the environment pilot.

Effect of Environmental Knowledge, Environ-mental Attitude and Motivation toward the People's Behavior to

Maintain Environment

To determine the influence of environmental knowledge (X1), environmental attitudes (X2), motivation to preserve the environment (X3) both of individually and simultaneously toward behavior to maintain the environmental (Y) in the Walenae watershed of South Sulawesi Province, the following the presented results of simple and multiple regression analysis (ANOVA) in Table 9.

Based on Table 9 shows that the Sig. F = 0.000 < a = 0.05 (for X1 on Y). This analysis shows that the environmental knowledge affects to the behavior of environmental preservation. Sig. F = 0.000 < a = 0.05 (for X2 on Y). This analysis shows that the attitude towards the environment affects to the behavior of environmental preservation. Sig. F = 0.000 < a = 0.05

Table 8. The Frequency Distribution of Motivation to Maintain an Environment

No	Category	Score	Frequency	Percentage (%)	% Cumulative
1	Very Hight	59,2 - 70	3	1,5	13
2	Hight	47,9 - 59,1	40	20	213
3	Moderate	36,6 - 47,8	78	39	60,5
4	Low	25,3 - 36,5	69	34,5	95
5	Very Low	14-25,2	10	5,0	100
Total		200	100		

Table 9. Results of a simple regression analysis (ANOVA) XI to Y, X2 to Y and X3 to Y, and multiple regression (ANOVA) of XI, X2, X3 toward Y.'

Variables

Model

Sum of Squares

Df

Mean Square

Sig-

X. toY

X,toY

X, toY

X1,X2fX, to Y

Regression 5127,668 1 5127,668

Residual 2658,065 198 45,829

Total 7785,733 199

Regression 7548,252 1 7548,252

Residual 237,481 198 4,095

Total 7785,733 199

Regression 7548,715 2 3774,358

Residual 237,018 197 4,158

Total 7785,733 199

Regression 7548,715 2 3774,358

Residual 237,018 197 4,158

Total 7785,733 199

111,888

1843,507

907,687

907,687

,000b

,000b

,000b

,000"

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(for X3 to Y). This analysis shows that the motivation to

maintain an environment affect to the behavior of environmental preservation. Sig. $F = 0.000 < \alpha = 0.05$ (for XI, X2, X3 on Y). This analysis shows that the environmental knowledge, attitudes towards the environment, and motivation to maintain an environment simultaneously affects to the people's behavior to manage the environment in the Walenae watershed of South Sulawesi Province.

To find out how large the influence of each dependent variables toward the people's behavior to maintain environment, then the following is presented result of simple and multiple regression analysis (Model Summary) in Table 10.

Based on Table 10 shows that the correlation coefficient of environmental knowledge (XI) of 0.812. This mean that the relationship between the environmental knowledge with people's behavior to preserve the environment (Y) in Walenae watershed of South Sulawesi Province relatively strong. Strong knowledge of environment can be used to predict the people's behavior in managing the environment. The coefficient of determination (R Square) of 0.660. This value shows that the influence of environmental knowledge toward the behavior to maintain the environment by 66%. There are influence of the other variables by 44% not included in the analysis model.

Adjusted R Square = 0.630; This value shows that the net effect of the environment knowledge to the behavior of public to maintain the environment in the Walanae watershed of South Sulawesi Province by 63%.

Based on Table 10 shows that the correlation coefficient of attitude towards the environment (X2) of 0.985. This value shows that the relationship between attitudes toward the environment with the people's behavior to maintain environment (Y) in the watershed Walenae South Sulawesi Province as very strong. That is a very strong attitude towards the environment to predict the behavior of manag-

ing the environment. The coefficient of determination (R Square) of 0.970. This value shows that the influence of environmental attitudes toward the behavior to maintain an environment of 97%. There are other variables influence

of 3% which affect the behavior to maintain an environment that is not included in the analysis model.

Adjusted R Square = 0.968; This value shows that the net effect of environmental attitudes towards people's behavior to maintain the environment in the Walanae watershed of South Sulawesi Province of 96.8%.

Based on Table 10 shows that the correlation coefficient of motivation to maintain the environment (X3) of 0.985. This value shows that the relationship between motivation with people's behavior to maintain the environment (Y) in the Walanae watershed South Sulawesi Province as very strong. That is a very strong motivation to maintain an environment to predict the behavior of managing the environment. The coefficient of determination (R Square) of 0.970. This value shows the effect of motivation on behavior to maintain an environment of 97%. There are other variables influence to the behavior to maintain an environment of 3% that is not included in the analysis model. Adjusted R Square = 0.968; This value shows that the net effect of motivation on the people's behavior to maintain an environment in Walanae watershed of South Sulawesi Province of 96.8%.

Based on Table 10 shows that the correlation coefficient of environmental knowledge, attitudes towards the environment, and motivation to maintain environmental (X1, X2, X3) of 0.985. This value shows that the relationship as very strong between environmental knowledge, attitudes towards the environment, and motivation (X1, X2, X3) with the behavior of people to maintain environmental. This means all of the dependent variables very powerful to predict the behavior of managing the environment. The coefficient of determination (R Square) of

Table 10. Results of the analysis of simple regression (Model Summary) X1 to Y, X2 to Y, X3 to Y, and multiple regression X1,X2,X3 to Y (Model Summary)

Variables

Model

R

R Square

Adjusted R Square

Std. Error of the Estimate

.

X ₁ toY	1	.812'	.660	.630	6.76969
X ₂ toY	2	.985'	.970	.968	2.02349
X ₃ toY	3	.985'	.970	.968	2.02349
X [^] , X [^] o Y	4	.985'	.970	.968	2.03917

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0.970. This value shows the influence of all of the dependent variables to the behavior to maintain the environment by 97%. There are other variables influence the behavior to maintain an environment of 3%. Adjusted R Square = 0.968; This value shows that the net effect of the all of dependent variables to tire people's behavior to maintain environment in the Walanae watershed at 96.8%. Based on the description mentioned above it can be concluded that the environment knowledge, the environment attitudes, and motivation to maintain an environment individually and simultaneously can predict the people's behavior to maintain the environment. To improve the people's behavior, it must strengthening of the environmental knowl-edge, the environment attitudes, and motivation to preserve the environment in tire form of intensive counseling of the environment knowledge,

mentoring and environment pilot.

To find out how large the contribution of the all of dependent variables to the people's behavior to maintain the residential environment either individually or together, the analysis results presented in Table 11.

Based on Table 11 shows that the Sig. $t = 0.000 < \alpha = 0.05$. It shows that the knowledge of the environment gives the contribution to the people's behavior to maintain the residential environmental (B = 2.930). This value shows that the contribution of environmental knowledge on the behavior of the community to maintain an environment of 2,930. Therefore it can be concluded that when enhanced the environmental knowledge (one part), then the behavior of the community to maintain the residential environment in Walenae watershed increased by 2,930.

Furthermore, in Table 11 shows that the Sig. $t = 0.000 < \alpha = 0.05$. It shows that tire environment attitude gives contribution to the people's behavior to maintain residential environmental (B = 1.044). This value shows that the contribution of the environmental attitudes towards the people's behavior to maintain an environment of 1,044. Therefore it can be concluded that when enhanced the environmental attitudes (one part), then the behavior of the community to maintain the residential environment in Walenae watershed increased by 1,044.

Furthermore, in Table 11 shows that the Sig. $t = 0.000 < \alpha = 0.05$. It shows that the motivation to maintain an environment gives contribution to the people's behavior to maintain the residential environmental (B = 1.047). This value shows that the contribution of motivation to the people's behavior to maintain an environment of 1.047. Therefore it can be concluded that when the motivation to maintain an environment enhanced (one part), then the behavior of the community to maintain an environment in Walenae watershed increased by 1,047.

In Table 11, it appears that for environmental knowledge Sig. $t = 0.007 < \alpha = 0.05$. It shows that the knowledge of the environment gives contribution to the people's behavior to maintain the residential environment. Contribution of the environmental knowledge on the behavior of the

community to maintain an environment of 0.078. Therefore it can be concluded that when enhanced environmental knowledge (one part) with regard to environmental attitudes, and motivation to preserve the environment, the people's behavior to maintain the residential environment increased by 0.078. Damerell, Howe and Gulland (2013) Provides evi-

Table 11. Results of simple regression analysis (Coefficients) X1 to Y, X2 to Y, X3 to Y, and multiple regression (Coefficients) X1, X2, X3 to Y.

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig		
	B	Standard Error	Beta			
1	(Constant)	20,428	2,577	7929	,000	
	Knowledge	2,930	,277	,812	10,578	
2	(Constant)	,545	1,092	,499	,620	
	Attitude	1,044	,024	,985	42,936	,000
3	(Constant)	,547	1,094	,501	,620	
	Motivation	1,047	,027	,987	42,939	,000
4	(Constant)	,630	1,129	558	,579	
	Knowledge	,094	,146	,078	24,102	,007
	Attitude	1,032	1,129	,974	24,129	,000
	Motivation	1,035	1,132	,977	24,132	,000

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dence to suggest that the environmental knowledge of learners is positively influenced by EE (environmental education). It is means of environmental education is needed to improve the environmental knowledge. The higher level of knowledge of the environment, the better the behavior of the community to maintain environment. Mulyadi (2010) explains that there is a direct effect of environmental knowledge on responsible environmental behavior of farmers of Sopeng District. Suwanto (2013)

explain that Environmental knowledge of peasant community in Banjarsari need to be developed to increase better pro-environmental behavior. Kumar (2012) have also discussed that the relationship between environmental knowledge and attitude was found to be positive and significant. While Kolmuss and Aegyman (2002) stated that most researchers agree that only a small fraction of pro-environmental behavior can be directly linked to environmental knowledge and environmental awareness. Aertsens, et al. (2011) mention that there may be a bidirectional cause-effect relationship between attitude and objective knowledge. Base on the stated of some researchers concluded the people's behavior to maintain residential environment influenced by environment knowledge. Ellen (1994) has found that subjective knowledge is positively associated with commitment to recycling, source reduction, and political action. Hines et al. (1987) says that when this relationship (knowledge and behavior) appears to be stronger, it is knowledge about an ecological behavior rather than factual knowledge about the environment that is related to ecological behavior. Furthermore, in Table 11 showed that the environment attitude of the Sig. $t = 0.000 < \alpha = 0.05$. It shows that the environment gives contribution to the people's behavior to maintain the residential environment with regard to environmental knowledge and motivation to preserve the environment. Beta = 0.974. This value shows that the contribution of the environment attitude to the society's behavior to maintain an environment of 0,974. Therefore it can be concluded that if tire attitude improved (one part) with regard to the environmental knowledge, and motivation to preserve the environment, the people's behavior to maintain the residential environment increased by 0,974. According to Zelezny and Schultz (2000), attitudes of environmental concerns are rooted in a person's concept of self and the degree to the which an individual perceives him or herself to be an integral part of the natural environment. Ajzen, (1991); and Cheng et al, emphasized that positive attitude towards a particular behaviour strengthens

the intention to perform that behaviour. Mansaray and Abijoye (1998) describe that the quality of the environment depends critically on the level of knowledge, attitudes, values and practices of consumers. Kollmuss and Agyeman (2002) describes that environmental attitudes have been found to have a varying, usually very small impact on pro-environmental behavior. The same result showed by Maleki and Karimzadeh (2011), that generally the environmental attitude and energy consumption attitude have a positive significant relationship with energy consumption behavior. Kuhlemeier et al. (1999) study of environmental literacy in Dutch ninth graders, they found a moderate correlation ($r = .36$) between attitude and behaviors. de Groot and Steg (2010) concluded that intrinsic motivation, integrated and external regulation made a significant contribution to the regression model. Respondents who were intrinsically motivated towards acting in favour of the environment were more likely to donate to environmental organisations and less to humanitarian organisations.

Furthermore, in Table 11 shows that the motivation to maintain an environment for Sig. $t = 0.000 < \alpha = 0.05$. It shows that the motivation to maintain the environment gives contribution to the people's behavior to maintain the residential environment with regard to environmental knowledge and the environment attitude. Beta = 0.977. This value shows that the contribution of motivation to maintain an environment to the people's behavior to maintain the residential environment amounted to 0.977. Therefore it can be concluded that when the motivation to maintain an environment enhanced (one part) with regard to environmental knowledge, and the environment attitudes, the people's behavior to maintain the residential environment increased by 0.977. Kollmuss and Agyeman (2002) argue that motivation is shaped by intensity and direction (which determines which behavior is chosen from all the possible options). Herath (2010) describes that motives for behavior can be overt or hidden—conscious or unconscious, motivation manipulates the relationship of attitude, subjective norm and perceived behavioural control with the intention. Zhu and Yang (2012) says that

motivation can be defined as those psychological tendencies and internal drive which stimulate and maintain an organism's actions and make them be towards a certain goal.

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While Beaton et al., (1998) says that an intrinsically motivated individual acts out of personal choice and interest.

The results are consistent with the Kollmus and Aegyman (2002), that some of the factors that inhibit pro-environmental behavior such as demographic factors, external factors (e.g. institutional, economic social and cultural factors) and internal factors (e.g. motivation, environmental knowledge, awareness, values, attitudes, emotion, locus of control, responsibilities and priorities). Berger and Corbin, (1992) note that it is not uncommon in the ecological domain that one type of ecological behavior is affected by either environmental attitude, environmental knowledge, environmental values or ecological behaviour intention while others are not.

Conclusion

Based on the description of the results of the study, the conclusions of this study are described as follows:

- The people's behavior to maintain the settlements environment in the Walenae watershed of South Sulawesi Province needs to be improved, especially on the aspect of waste management, and drainage maintenance.
- The environment knowledge of the communities in the Walenae watershed still needs to be improved, especially on the aspects of comprehension, application, analysis, synthesis, and evaluation of the environment.
- The environment attitude of the society in Walenae watershed positive trend but still needs to be improved, in terms of cognitive, affective, and psychomotor.
- The Motivation to maintain the residential environment

in the Walenae watershed classified as moderate, seen from the aspect of intrinsic motivation and extrinsic motivation.

- The environmental knowledge, the environment attitudes and the motivation of maintaining environmental give a positive impact and make a significant contribution either individually or simultaneously to the people's behavior to maintain the neighborhoods in the Walenae watershed of South Sulawesi Province.

Recommendation

1. The environment knowledge of the communi-

ties in the Walenae watershed needs to be improved by providing counseling, reinforcement of waste management, and residential drainage. Increasing of the knowledge society will automatically change the environment attitude to a positive direction and strengthen the motivation to preserve the environment.

2. The People in the Walenae watershed of South Sulawesi Province should be given to strengthen the attitude by giving the pilot a good waste management, maintenance of residential drainage, and pilot a good environment.

3. The people in the Walenae watershed of South Sulawesi Province needs to be given continuously motivated by bringing them to participate in managing waste and maintain the settlements drainage.

4. To improve the behavior of people to maintain the environment in Walenae watershed of South Sulawesi Province then that needs to be done is to increase the knowledge of the environment, directed the attitude towards a positive, and provide motivation to maintain the environment. Increasing of the motivation must be done continuously to maintain the neighborhoods.

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