

Community Awareness, Attitude and Behavior Relating to Environmental Conservation

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Abstract

Environmental crisis over recent decades is growing more severe. Villagers' participation and involvement is very important driver for sustainable environmental conservation in community. This paper aims (i) to study the villagers' awareness, attitude and behavior on natural resources and environmental conservation within community, (ii) to investigate factors influencing villagers' awareness, attitude and behavior on natural resources and environmental conservation in community, and (iii) to study the relationship of villagers' awareness, attitude and behavior on natural resources and environmental conservation in community. The population was 1,325,945 villagers in the Khon Kaen Province, Thailand. The study areas were four districts, namely; Namphong, Khao Suan Kwang, Ban Fang and Nong Rue districts, which were selected by stratified sampling technique. A total of 393 villagers from four districts were collected by simple random sampling technique for a survey done in 2013. The data collection tool was the closed-ended questionnaires. The mean, frequency, percentage, standard deviation, t-test, One-Way-ANOVA and Pearson's Product Moment Correlation were used to analyze the data. The findings revealed that; 1) the villagers' awareness, attitude and behavior on natural resources and environmental conservation in community were at good level, 2) the level of education influences on the different level of awareness and attitude on natural resources and environmental conservation of villagers, 3) the villagers' awareness, attitude and behavior on natural resources and environmental conservation were significantly positively correlated at 0.01 level.

Keywords: community awareness and attitude, community behavior on natural resources and environmental conservation

1. Introduction

Social and economic development activities together with rapid population growth are degrading natural resources and environmental quality. Presently, environmental crisis affects human's way of living.

Most human population neglect and disregard the overuse of natural resources and the decline of environmental quality. [2], [15] Many tend to do not participate in protecting the natural resources and environment because they may lack of positive understanding, knowledge, awareness, attitude, behavior on that. Moreover, many do not understand and fail to see the benefits directly applicable to them and their community. [13], [15]

Thiengkamol [15] mentioned that inspiration of public consciousness or public mind for environmental conservation behavior is occurred from insight the mind and thought. Human will be aware and participate in natural resources and environmental conservation, if they have knowledge of the environment on their holistic view. Moreover, they must have capability to make a decision in resolving environmental problems.

Sustainable development and environmental sustainability have become global issues. Education can be an effective tool leading to achieve this goal. [4], [7] Especially, the environmental education, which is a learning process that can help increasing people's knowledge about the biophysical environment, raising awareness on environmental issues, changing human behaviors and improving problem – solving skills. Environmental conservation and sustainable development can be achieved by human participation and responsible action through environmental education. [8], [10], [14], [15]

Community plays an important role to promote and support environment conservation. People in community are an important driver in resolving the environmental crisis. [8] Therefore, the researcher is interested to study the awareness, attitude and behavior of villagers in view of the natural resources and environmental management in community.

2. Aims

The objectives of this research were:

- 2.1 To study the villager’s awareness, attitude and behavior on natural resources and environmental conservation in community.
- 2.2 To investigate factors influencing villagers’ awareness, attitude and behavior on natural resources and environmental conservation in community.
- 2.3 To investigate the relationships between awareness, attitude and behavior on natural resources and environmental conservation in community.

3. Theory, concept of the research and related findings

In order to meet the research objectives, the researcher has reviewed the related literature on environmental conservation, and sustainable development. Concept of environmental education, awareness, attitude and behavior has been applied for the conceptual framework.

The operational definitions of some concepts, such as awareness, attitude, behavior and environmental education, are as follows:

Awareness: concern, and attention to experiencing matters and environmental issues. [1]

Attitude: feelings in a positive or negative way towards what is happening in particular of knowledge, understanding and emotion, feeling and motivation for participation in environmental activities and environmental conservation. [4]

Behavior: villagers’ involvement and participation in environmental protection and conservation, environmental responsible behavior. [18]

Environmental Education: a learning process that increase people’s knowledge about the biophysical environment, raise awareness on environmental issues, develop a sense of environmental concern, improve people’s solving skills on global environmental problems, participate and work toward the solution. [14]

4. Methodology

This study is a survey research. The population was 1,325,945 villagers in the Khon Kaen Province, Thailand. The four districts, namely; Namphong, Khao Suan Kwang, Ban Fang and Nong Rue districts, were selected using the stratified sampling technique, and the simple random sampling technique was employed to select 393 villagers by this study. The close-ended questionnaire with a five-level rating scales on natural resources and environmental management in community was distributed to 393 villagers in 2013. The questionnaire was based on comprehensive literature reviews. [6], [8], [9], [12] The content and structural validity were determined by Item Objective Congruent (IOC) with 3 experts in the aspects of psychology, social research methodology and environmental education. The reliability was determined by the Cronbach’s Alpha while the reliability test of the whole questionnaire was 0.874. The final questionnaire consisted of six parts and total number of questions was 75 items. The environmental topics were divided into four areas, namely; natural resources; water, forest, environment; energy and waste. Frequency, percentage, mean, standard deviation, t-test, One-Way-ANOVA and Pearson’s Product Moment Correlation were used to analyze the data.

5. Study/experiment results

The study findings are shown in Table 1-5. The demographic characteristics of respondents are presented in Table 1.

Table 1: Demographic Characteristics of Respondents.

Characteristics		
Sex	Frequency	Percent
Male	189	48.1
Female	204	51.9
Total	393	100.0
Age	Year	S.D.
Minimum	20	
Maximum	60	
Average	42.26	8.9
Education Level	Frequency	Percent
Primary school	101	25.7
High school	99	25.2
Secondary school or equal level	78	19.8
Diploma or equal level	25	6.4
Bachelor	59	15.0
Higher than Bachelor	31	7.9
Occupation	Frequency	Percent
Farmers	72	18.3
Agriculturist	75	19.1
Salesmen	34	8.7
General hire	61	15.5
Housewives	23	5.9
Official	69	17.6
Employees	59	15.0
Total	393	100.0

From Table 1, the sampled respondents of this study were 393 villagers from four districts in Khon Kaen Province, Thailand. Most of them were female with 51.90 % and had age average of 42.26 years old. Most of them had education at primary school level with 25.70 % and their occupation as agriculturist with 19.10 %.

Table 2: Results of the Awareness, Attitude and Behavior on Natural Resources and Environmental Conservation in Community.

Variable	\bar{x}	SD	Meaning
Awareness	4.22	0.34	good
Attitude	4.36	0.38	good
Behavior	3.59	0.44	good
Total	4.05	0.28	good

From Table 2, the result showed that the villagers' awareness, attitude and behavior on natural resources and environmental conservation in community were all at “good” level; which were 4.22, 4.36 and 3.59 respectively. The average rating score was at “good” level (Mean = 4.05).

Table 3: Results of the Villagers' Awareness (AW), Attitude (AT) and Behavior (BH) on Natural Resources and Environmental Management.

Topics	AW		AT		BH	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
Water	4.24	0.54	4.35	0.50	3.82	0.65
Forest	4.02	0.35	4.37	0.46	3.61	0.59
Energy	4.26	0.42	4.33	0.47	3.70	0.62
Waste	4.36	0.46	4.39	0.50	3.25	0.58
Total	4.22	0.34	4.36	0.38	3.59	0.44

From Table 3, the results showed that the awareness, attitude and behavior towards environmental management of villagers in four issues, which were water, forest, energy and waste, were all at “good” level, except the behavior on waste management was at a “fair” level (Mean = 3.25).

Table 4: Comparison of the Villagers' Awareness (AW), Attitude (AT) and Behavior (BH) on Natural Resources and Environmental Conservation by Gender.

	Male		Female		t-value	p-value
	(\bar{x})	SD	(\bar{x})	SD		
AW	4.21	0.34	4.23	0.35	-.521	.603
AT	4.30	0.39	4.41	0.36	-2.705	.007**
BH	3.62	.43	3.55	.44	1.635	.103

** P<0.01

From Table 4, the results showed that male and female had the difference of environmental attitude with statistically significant at 0.01, female had more positive attitude level than the male.

The results of One-way ANOVA showed that there were different of average scores about awareness on natural resources and environmental conservation of villagers as illustrated in Table 5. This meant that the level of education influence on environmental awareness.

Table 5: Comparison of the Villagers' Awareness on Natural Resources and Environmental Conservation by Education.

Source of Variation	Sum of squares	Df	Mean Square	F	p-value
Between Group	1.811	5	1.633	3.177	.008**
Within Group	44.114	387	4.975		
Total	45.925	392			

** P<0.01

The LSD was used for analysis of each pair of education level to determine the mean score differences of their environmental attitude. It showed that the villagers' attitude of Primary School and Secondary School or equal level were statistical different ($p<0.01$) (Mean = 4.13 and 4.28), of the Primary School and Bachelor were also statistical different ($p<0.01$) (Mean = 4.13 and 4.28), and including of the Primary School and Higher than Bachelor were statistical difference

($p<0.01$) (Mean = 4.13 and 4.31), all as illustrated in Table 6.

Table 6: LSD Analysis of Each Pair Comparisons.

Awareness	P S	H S	SS	D P	BC	HB
PS	-	-	.003**	-	.006**	.009**
HS		-				
SS			-			
DP				-		
BC					-	
HB						-

PS: Primary School, HS: High School, SS: Secondary School or equal level, DP: Diploma or equal level, BC: Bachelor, HB: Higher than Bachelor

Table 7: Comparison of the Villagers' Attitude on Natural Resources and Environmental Conservation by Education Levels.

Source of Variation	Sum of squares	Df	Mean Square	F	p-value
Between Group	2.164	5	.433	2.995	.011*
Within Group	55.930	387	.145		
Total	58.094	392			

* P<0.05

Table 7 indicated that the villagers' environmental attitude was significantly different between education groups.

The LSD was used for analysis of each pair of education level to determine the mean score differences of their environmental attitudes. It showed that the villagers' attitude of Primary School and High School were statistical different ($p<0.01$) (Mean = 4.28 and 4.34), of the Primary

School and Secondary School or equal level were statistical different ($p < 0.01$) (Mean = 4.28 and 4.45), and of the High School and Secondary School or equal level were statistical different ($p < 0.05$) (mean = 4.34 and 4.45), also including of the High School and Diploma or equal level were statistical different ($p < 0.05$) (Mean = 4.34 and 4.52) as illustrated in Table 8.

Table 8: LSD Analysis of Each Pair Comparisons.

Attitud e	P S	HS	SS	DP	B C	H B
PS	-	.002**	.004**	-		
HS		-	.040*	.032*		
SS			-			
DP				-		
BC					-	
HB						-

PS: Primary School, HS: High School, SS: Secondary School or equal level, DP: Diploma or equal level, BC: Bachelor, HB: Higher than Bachelor

Table 9: Comparison of the Villagers' Behavior on Natural Resources and Environmental Conservation by Education.

Source of Variation	Sum of squares	Df	Mean Square	F	p-value
Between Group	1.844	5	.369	1.964	.083
Within Group	72.679	387	.188		
Total	74.523	392			

* $P < 0.05$

From Table 9, the result showed that the villagers who had different education level had no

difference in environmental related behavior level ($p > 0.05$).

Table 10: Correlation between Villagers' Awareness, Attitude and Behavior on Natural Resources and Environmental Conservation in Community.

Variable	Attitude	Behavior
Awareness	.603**	.157**
Attitude		.132**

** $P < 0.01$

From Table 10, the results illustrated the awareness of villagers were significantly correlated with attitude and behavior on natural resources and environmental conservation ($p < 0.01$), while the villagers' attitude towards environment were correlated to behavior on natural resources and environmental conservation in community ($p < 0.01$).

6. Summary and explanation of results

6.1 The result indicated that the villagers' awareness, attitude and behavior on natural resources and environmental management conservation in community were at “good” level. However, the finding revealed that villagers' behavior towards waste management was at “fair” level. This is consistent with research of Praneetham and Thathong [9] that students' attitude towards the environment was at “good” level.

6.2 Müderrisoglu and Altanlar [5] mentioned that gender has a high effect on environmental attitudes and behaviors; namely, women's attitudes and behaviors toward protecting the environment are higher than men. The result of this study revealed that the attitude towards environment of female was better than male with the difference of statistically significance level of 0.01. Thus, both male and female should receive equal education because similar levels of knowledge, understanding, and positive attitude towards environment issues will help to protect and conserve the environment and natural resources. [9]

The result revealed that the difference of the villagers' awareness and attitude towards the environment was highly statistical significance at the level of 0.01. The villagers holding higher degree had better awareness and attitude on natural resources and environmental conservation. This is consistent with research of Xu, et al. [17] that people's knowledge level correlates the environmental conservation.

Increasing environmental literacy will lead to a change in environmental awareness, attitude and behavior. Education is an important process which can help people gain knowledge and raise their awareness on environmental conservation. As mentioned by many researchers that the environmental education is one of the most effective strategies that helps people to understand the relationship between human and environment. This education can help create public consciences, increase knowledge, raise awareness, change attitude and behavior towards environment. Therefore, increasing environmental education in school and cross all university is needed and it should be integrated into every learning subject and at every education level. [8], [10], [14], [15], [17]

6.3 The result revealed that awareness, attitude and behavior on natural resources and environmental management conservation in community correlated with each other and had positive relationship significantly at 0.01 level. Knowledge, attitude and awareness influence environmental behavior changing. Hence, it is needed to promote better knowledge about environment, stronger awareness and good attitude of the environment issues which can lead to positive change in behavior.

In most of the studies carried out previously stated that public environmental awareness can ensure improving effective environmental protection and conservation. If people have positive awareness and attitude, their behavior towards the environmental management will be also good. Everyone should therefore modify their behaviors, conserve the environment by solving environmental problems, participate and involve more in environmental activities and environmental conservation for establishing the sustainability of the environmental conservation in community. [6], [8], [9], [11], [12], [16], [17]

7. Recommendations

7.1 Recommendations gained from the research :

The result from the study indicated that villagers' behavior towards waste management was at "fair" level. Their behavior could cause the environmental crisis and degradation in the future. The community and concern organization should therefore be more concerned and find out effective way to improve villagers' behavior towards the environment. Moreover, villagers' participation and involvement and skills for solving environmental problems should be encouraged for sustainable environmental conservation in community. It is an urgent need to educate villagers and enhance their knowledge about the environment issues and waste management.

7.2 Recommendations for further studies

It is recommended to study factor affecting participation and involvement in environmental activities of community and waste management in community.

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