

## The Study of Effects of the Waste Management Training Program on Knowledge and Awareness of Waste Management of the Administrators in the Subdistrict Administration Organizations

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**Abstract:** This study aimed to investigate the effects of waste management training program on knowledge and awareness of waste management of 54 administrators in the subdistrict administration organizations in Nongkhai Province with different ages, positions and educational levels. They were purposively selected. The research instruments included a waste management training program for 3 days, a questionnaire on knowledge of waste management and a questionnaire on awareness of waste management. The collected data were analyzed by the uses of percentage, mean, standard deviation, paired t-test and F-test (One-way ANCOVA). The major findings revealed that the administrators in the subdistrict administration organizations showed gains in knowledge and awareness of waste management from before training ( $p < 0.05$ ). The subdistrict administrators with different ages and educational levels did not indicate this knowledge and awareness differently. However, the secretary to the subdistrict administrator and the deputy of the subdistrict administrators indicated more knowledge than the head of the subdistrict administrators ( $p < 0.05$ ). Whereas, the subdistrict administrators with different positions did not show awareness differently ( $p > 0.05$ ).

**Key words:** Waste management model, training model, knowledge, awareness, subdistrict administration organizations, participation

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### INTRODUCTION

Environment problems in Nongkhai Province have not been resolved. In 2006, the Office of Natural Resources and Environment, Nongkhai Province reported that the environmental problems has been effecting to the society and community in Nongkhai Province which including three mains problems; water pollution, air pollution and waste pollution. The economic situation in Nongkhai Province has rapidly increased in particular increasing of the number of tourists therefore, the waste products have also been increased. On the other hand, the quality of waste management system in the communities was not effective; there were 20-60% of waste products remained.

The improvement of knowledge and awareness of subdistrict administrators regarding waste management is important for reducing the environmental problems. Therefore, an appropriate waste management model is essential for the training program and it indicated the framework for improvement of the ability of the subdistrict

administrators regarding waste management in the future (Chaitach *et al.*, 2010; Marthandan, 2007; Omotosho and Olu-Olu, 2007).

#### The research's purposes:

- To study knowledge and awareness of the leaders in the subdistrict administration organization in Nongkhai Province regarding the waste management
- To compare knowledge and awareness of waste management of the leaders in the subdistrict administration organization with different positions, ages and educational levels

### MATERIALS AND METHODS

**Method and statistics:** The target population in this study were 436 administrators in 109 subdistrict administration organizations in Nongkhai Province. The sample of 54 subdistrict administration was purposively selected for the study. The experimental research design was conducted, data collection strategies were the followings:

**Step 1**

**Pretest:** The participants were asked to complete the survey questionnaires which including two parts (knowledge and awareness of waste management) for 60 min.

**Step 2**

**Training:** The researcher organized the waste management training program. All participants were requested to attend the 3 days training course.

**Step 3**

**Posttest:** After the training, the participants were asked to complete the survey questionnaires which including two parts (knowledge and awareness of waste management) for 60 min. Research instruments included; waste management course; survey questionnaire about knowledge and questionnaire about awareness of waste management in Nongkhai Province.

**The procedure for collecting data**

**Preparing phase:** The letter of permission to conduct this research study was obtained from the Faculty of Graduate Studies, Mahasarakham University. The researcher was contacted the subdistrict administration organization in Nongkhai Province for participation in the research project and collecting data.

**Training phase:** The participants were assigned to do pretest using the survey questionnaires which including two parts (knowledge and awareness of waste management) before participating the training program. Then, the results were recorded.

The participants were attended the training of waste management for 3 days.

**Final phase:** After the training program completed, the participants were asked to complete the survey questionnaires again using the same as pretest. The test results were analyzed for testing hypotheses.

**Data analysis:** The posttest scores were analyzed for testing assumptions on normality, homogeneity of variance and homogeneity of regression slope. The results met the requirements of the assumptions. The posttest scores of knowledge and awareness as a whole and in each subscale were analyzed by the F-test (ANCOVA) for testing hypotheses.

**RESULTS AND DISCUSSION**

The study revealed that after the training, the leaders in the subdistrict administration organization showed gains in knowledge and awareness of waste management ( $p < 0.05$ ) (Table 1). The possible of increasing of

Table 1: Comparisons of knowledge and awareness of the waste management of the subdistrict administrators (pretest and posttest)

Variables	$\bar{X}$	SD	t	p-value
<b>Knowledge</b>				
Pre-test	11.93	0.773	-8.006	<000*
Post-test	17.89	0.769	-	-
<b>Awarenes</b>				
Pre-test	1.17	0.805	-6.047	<000*
Post-test	2.83	0.504	-	-

\*Statistical significance at 0.05

Table 2: Comparisons of knowledge and awareness of waste management of the subdistrict administrators with different positions

Variables	n	$\bar{X}$	SD	F	p-value
<b>Knowledge</b>					
Head	18	17.20	0.789	7.528	<000*
Deputy	18	18.21	0.802	-	-
Secretary	18	18.57	0.535	-	-
<b>Awarenes</b>					
Head	18	2.81	0.412	1.612	0.198
Deputy	18	2.83	0.519	-	-
Secretary	18	2.82	0.535	-	-

\*Statistical significance at 0.05

Table 3: Comparisons of knowledge and awareness of waste management of the subdistrict administrators with different ages

Variables	n	$\bar{X}$	SD	F	p-value
<b>Knowledge</b>					
Age <45 years	44	17.95	0.806	1.326	0.439
Age ≥45 years	10	17.60	0.516	-	-
<b>Awarenes</b>					
Age <45 years	44	2.82 <sup>1</sup>	0.501	1.537	0.52
Age ≥45 years	10	2.86 <sup>1</sup>	0.483	-	-

<sup>1</sup>At a more level ( $\bar{X} = 2.51-3.00$ )

knowledge and awareness of the participants was that all of them having self-awareness of the affects of wastes toward the society and they might have intention to learn and understand about the effective waste management in the household and at the communities level. The effective waste management training program such as appropriated activities were influences in the improving in knowledge and awareness of the subdistrict administrators.

The secretary to the subdistrict administrator and the deputy of the subdistrict administrator indicated more knowledge than the head subdistrict administrator. The secretary to the subdistrict administrator and the deputy of the subdistrict administrator were commonly practicing for subdistrict administrators therefore, they had more understanding about waste management than the head of subdistrict administrator which acts as a policy maker.

However, all of the participants concerned about the value of the waste management training program. Therefore, they did not show their awareness waste management differently (Table 2).

The study revealed that the subdistrict administrators with different ages did not show their knowledge and awareness of the waste management differently at a more level (Table 3). The results may be in part due to all participants were involved in waste management in household and at the communities level in particular

Table 4: Comparisons of knowledge and awareness of waste management of the subdistrict administrators with different educational levels

Variables	n	$\bar{X}$	SD	F	p-value
<b>Knowledge</b>					
Below bachelor degree	33	17.97	0.637	0.889	0.381
Bachelor degree or higher	21	17.76	0.944	-	-
<b>Awarenes</b>					
Below bachelor degree	33	2.84 <sup>1</sup>	0.502	1.755	0.052
Bachelor degree or higher	21	2.83 <sup>1</sup>	0.483	-	-

<sup>1</sup>At a more level ( $\bar{X}$  = 2.51-3.00)

provided knowledge of the management of waste products to the people. In providing information to the communities, subdistrict administrators should have enough knowledge about waste management.

The subdistrict administrators with different educational levels did not indicate different knowledge and awareness of waste management ( $p > 0.05$ ) (Table 4). The subdistrict administrators who graduated with Bachelor Degree or higher have knowledge and understanding about waste management from training and have the role of giving this knowledge to people. Therefore, all of them had no difference in knowledge and awareness of waste management.

### CONCLUSION

The number of participants was equally in each group (head of subdistrict administrator, the deputy of the subdistrict administrator and the secretary to the subdistrict administrator). Most of them were 45 years of age and held below bachelor degree.

All participants showed gains in knowledge and awareness regarding the waste management from before receiving training. The participants as classified according to age and educational level did not show different knowledge and awareness of waste management after participating in training (Brady, 2004; Erickson, 2003;

Cascio, 1998). However, the secretary to the subdistrict administrator and the deputy of the subdistrict administrator had more knowledge after the training than the head subdistrict administrator but they did not evidence awareness differently.

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