Development of a Sanitation and Environmental Management Model Using Participatory Process in Prachinburi Honda Cars Co. Limited

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ABSTRACT

This research aimed to study problems of the corporate environments and their causes and the importance of the development of a sanitation and environmental management model using participatory process in Prachinburi Honda Cars Co. Limited; and to develop and evaluate the developed model. The participatory action research (PAR) and the pretest–posttest one group design were employed. The development was divided into 4 stages. The first stage was to study the problems of corporate environments and their causes and the importance of the developments of a sanitation and environmental management model of the corporation. The second stage was to develop the sanitation and environmental management model of the corporation using the participatory process. The third stage was the try–out of the developed model. The fourth stage was the acceptance of the model by experts. The purposively selected 27 corporate personnel were participated in the try–out of the model for two days. The data were collected using a questionnaire, a model evaluation form, a training handbook on sanitation and environmental management using the participatory process, an environmental perception questionnaire, and a questionnaire on participation in sanitation and environmental management. The statistics used for analyses of the collected data were percentage, mean, standard deviation, the paired t–test, the and F–test (Two–way MANCOVA and ANCOVA).

The research findings were as follows:

The developed sanitation and environmental management model using the participatory process consisted of 6 components: (1) needs study and goal setting; (2) analysis of problems of corporate environments and their causes, and an importance of the development of the sanitation and environmental management model; (3) objective setting and training plan; (4) training with emphases on participation in identification of environmental problems and their causes, problem preventive advantages gaining, and follow–up and evaluation; (5) obtained outcomes such as environmental perception and participation in sanitation and environmental management, and (6) evaluation/revision. This developed model was assessed as appropriateness by the experts.

The corporate personnel as a whole and as classified according to sex, age and education level showed environmental perceptions at a more level and indicated participations in sanitation and environmental management in general and in each subscale at a more to the most level which was increased from before attending the training at the .05 level of significance, which showed perception at a less to a moderate level and the participations at a less level.

The corporate personnel with different sexes or ages did not indicate posttest environmental perceptions and posttest perception of sanitation and environmental development in general and in each subscale differently. Also, the statistical interactions of sex and age were not found to be significant.

Keywords: Environmental Education, Environmental Management, Participatory Process
INTRODUCTION

Prachinburi Honda Cars Co. Limited is an operational business company concerning buying, selling and exchanging Honda Cars including auto parts service saloon and maintenance. The operation of activities of the company for selling goods and providing the services as mentioned is regarded as very important supply chain for the environmental system management in the community. This is to respond to development strategies on the basis of biological diversity and on creation of stability of environmental resources fundamentals according to the Tenth National Plan for Economic and Social Development 1997–2011. Major processes are to cooperatively create peaceful society and to use sufficiency economy philosophy by upholding the principle of “sufficiency” of the way of life as related to and relying on environment resources of such people, community and society leading the “middle way or equilibrium” between conservation and utilization, between short–term and long–term benefit, and between advantages and disadvantages at the same time. Consideration of “virtue or fairness” of occupying, right to access utilization sharing benefit among the groups of stakeholders and building knowledge and upholding the principle of approximacy were focused in order to create insurance that natural resources will exist and will remain fertility and can be the fundamental of community people.

From the information above, it can be seen that Prachinburi Honda Cars Co. Limited is a car service center and a car repair garage which applies more engines, instruments, appliances, different kinds of chemicals, and model technologies. For all these, if engines and machines are used in service without correct knowledge and understanding of the method of preventing dangers, unsafely may occur in working. Working environments such as heat, light, sounds, chemicals, and dust all are causes of dangers and pathogens working. From a study of Unsafe Act, it was found that there were accidents at 80 percent; and the unsafe condition could partly cause accident 10 percent. Therefore, based on the reasons as mentioned, the researcher as the general manager of Prachinburi Honda Cars Co. Limited was interested in conducting a study of participatory process for development of a sanitation and environmental in Prachinburi Honda Cars Co. Limited.

OBJECTIVES

The objectives of the research

1) To develop the sanitation and environmental management model using the participatory process of the company personnel in Prachinburi Honda Cars Co. Limited.

2) To evaluate the usage of the sanitation and environmental model using the participatory process of the company personnel in Prachinburi Honda Cars Co. Limited in terms of knowledge of the sanitation and environmental management model and their agreements with participation in sanitation and environmental management as a whole and in each aspect.

RESEARCH METHODOLOGY

This study is a development research to develop the sanitation and environmental management model using the participatory process in Prachinburi Honda Cars Co. Limited. The author assigned the study to 4 stages as follows:

Stage 1 developed the sanitation and environmental management model using the participatory process in of personnel Prachinburi Honda Cars Co. Limited personnel.
The population used consisted of 5 experts in managing sanitation and environment for environmental education.

Stage 2 examined current conditions, problems and needs for the sanitation and environmental management model in Prachinburi Honda Cars Co. Limited.

The population consisted of 60 workers of Prachinburi Honda Cars Co. Limited.

The sample consisted of 50 workers of Prachinburi Honda Cars Co. Limited personnel, obtained using the purposive sampling technique.

Stage 3 tried out the sanitation and environmental management model using the participatory process.

The population consisted of 69 workers of Prachinburi Honda Cars Co. Limited.

The sample consisted of 27 workers of Prachinburi Honda Cars Co. Limited, obtained using the purposive sampling technique.

The variables in the study were:

**Independent variables:**
1) The sanitation and environmental management model using participatory process
2) Gender
3) Age comprising 20–25 years, 26–30 years, 31–35 years, and 30–40 years

Dependent variables including, knowledge about the environment and participation in managing sanitation and environment.

Stage 4 certificated the development of the sanitation and environmental management model using participatory process. Five experts in managing sanitation and environment in terms of environmental education evaluated the model appropriateness.

**RESULTS**

The results were discussed follow the research process

The sanitation and environmental management model using the participatory process in Prachinburi Honda Cars Co. Limited consisted of 6 components: 1) Need study and goal determination; 2) analyzes of condition of problems, causes, and significance of developing the model of managing sanitation and environment; 3) determination of objectives and training plan; 4) training by emphasizing participation in seeking problems, preventing problems, receiving benefit, and follow–ups for evaluation; 5) Needed results comprising perception of environment and participation in managing sanitation and environment; and 6) In evaluation/improvement, the qualified persons viewed to be appropriate and certified at a high level.
The personnel as a whole and as classified according to gender, age, and level of education after training in managing sanitation and environment showed their perception of environment as a high level and participation in managing sanitation and environment as a hole and in each aspect from a high level to the highest level which increased from before training with perceptions being from a low level to a medium level and participation being at a low and at the .05 level of statistical significance.

The personnel with differences in gender and age did not show different perception of environment and participation in managing sanitation and environment as a hole (Table 1) and in each aspect (Table 2) after training in sanitation and environment. There were no interactions between gender and age,

**Table 1: A Comparison of Environmental Perception and Participation in Sanitation and Environmental Management as a whole of the Personnel in Prachinburi Honda Cars Co. Limited with Differences in Gender and Age (Two–way MANCOVA)**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Testing Statistic</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>F</th>
<th>p</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender</td>
<td>Wilks' Lambda</td>
<td>2</td>
<td>20</td>
<td>1.676</td>
<td>.212</td>
<td>.144</td>
</tr>
<tr>
<td>age</td>
<td></td>
<td>2</td>
<td>20</td>
<td>.099</td>
<td>.906</td>
<td>.010</td>
</tr>
<tr>
<td>interaction</td>
<td></td>
<td>2</td>
<td>20</td>
<td>2.851</td>
<td>.081</td>
<td>.222</td>
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</table>

* at the .05 level of significance
Table 2: A Comparison of Participation in Sanitation and Environmental Management as a whole of the Personnel in Prachinburi Honda Cars Co. Limited with Differences in Gender and Age (Two–way ANCOVA)

<table>
<thead>
<tr>
<th>Participation</th>
<th>Source of Variance</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>Partial Eta Squared</th>
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</thead>
<tbody>
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<td>.037</td>
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<td>age</td>
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<td>1</td>
<td>.011</td>
<td>.436</td>
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<td>1</td>
<td>.028</td>
<td>1.101</td>
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<td>.001</td>
<td>.038</td>
<td>.847</td>
<td>.002</td>
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<tr>
<td></td>
<td>age</td>
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<td>1</td>
<td>.008</td>
<td>.369</td>
<td>.550</td>
<td>.016</td>
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<tr>
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<td>interaction</td>
<td>.001</td>
<td>1</td>
<td>.001</td>
<td>.051</td>
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<td>.002</td>
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<tr>
<td>Raw Material</td>
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<td>.001</td>
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<td>age</td>
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<td>1</td>
<td>.011</td>
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<td>1.487</td>
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<td>.063</td>
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</table>

In conclusion, the development of a sanitation and environmental management model using the participatory process in Prachinburi Honda Cars Co. Limited was appropriated. The trained personnel increased their perception of environment and participation in managing sanitation and environment. This model could be implemented in other branches of Prachinburi Honda Cars Co. Limited.

DISCUSSION

This study of the development of a sanitation and environmental management model using the participatory process in Prachinburi Honda Cars Co. Limited could provide findings which could be discuss as follows:

The model of managing sanitation and environment using the participatory process in Prachinburi Honda Cars Co. Limited consisted of (1) examination of needs and determination of problem, (2) analysis of conditions of problems and causes, and significance of developing the model of managing sanitation and environment, (3) determination of objectives and training plan (4) training by emphasizing participation in seeking problems, preventing problems, receiving benefit, and follow ups for evaluation; (5) needed results comprising perception of environment and participation and environment and (6) evaluation/improvement which the qualified persons viewed to be appropriated and certified. These research results may in part were due to the author upheld the guideline for developing the handbook relying on the concept of the United Nation Organization (1976) and participation of people or mass at different level who decided on action about the environment in dimension of society and resources allotment. In addition, the author used the principle of mass participation in development to generate worthwhile utilization of resources which was leading to the process of bringing people to participate in development, to cooperate in thinking, decision making, solving problems of their own, using creative thinking and using people’s expertise together with using appropriate techniques of problem-solving according to the concept of Erwin (1976). This is in accordance with Thanongsak Khumkhainam (1997) who states that the characteristic of a participation consist of the following aspects: participation in seeking problems and causes of problems, participation in planning for activity operation, participation in investment and work performance, and participation in follow–ups and evaluation.
For the results of try out the model of managing sanitation and environment using the participatory process in Prachinburi Honda Cars Co. Limited, the following were found:

The personnel as a whole and as classified according to gender, age and level of education showed their perceptions of environment and participation in managing sanitation and environment as a whole and in each aspect from a high level to the highest level, which increased form before training in managing sanitation and environment using the participatory process at the .05 level of significance. These research results might be in part due to participatory learning which used the group process to drive activities. The author determined activity doing while managing sanitation and environment using participatory process in Prachinburi Honda Cars Co. Limited. The activities were: brainstorming for perceiving problems of environment involving working such as problems affecting themselves, people around them, company society, nation, and the world. Emphases were on having the company personnel realize the values of managing sanitation and environment using the participatory process in Prachinburi Honda Cars Co. Limited can help with problem-solving by talking to each other and sharing ideas from all sections. Each workers from each section had opportunities to share knowledge and experiences in the environmental issue which connected various sections from having responsibility for the environment. And emphasis was on having interactions between the personnel sections and administrative section (Social constructivism) (Paitool Suksringarm : 2008) reliance was on the concept of having persons motivate each other (Kanchana Chaiyaphan : 2006). This would build experience for workers in group to generate learning, concepts, aptitudes, and treatment to the environment appropriately by themselves (Malee Sonthikettarin : 1987). Furthermore, the author regarded the principle of adult learning to participation in managing sanitation and environment (Wichit Awalul : 1997). Therefore the personnel in Prachinburi Honda Cars Co. Limited have more knowledge of managing sanitation and environment and more agreement with participation in managing and environment as a whole and each aspect before managing sanitation and environment using the participatory process. This is in accordance with the result of the study conducted by Yongyut Srisaentao (2002) who found that the environmental managers as a whole and as classified according to the company size, company location and period of time after passing standard certification of environmental management, after the company has been certified for standard of managing environment, viewed about decreasing pollution as a whole at a high level.

The personnel with differences in gender and age did not show different perceptions of environment and participations in managing sanitation and environment as a whole and in each aspect. The research result was in part due to different activities as organized. The activities were: brainstorming of the personnel, field trip to see reality of problem condition of inappropriate environment and field trip to appropriate environment as related to managing sanitation and environment of company. This would lead to the goal that the company personnel would have knowledge and understanding of environmental problem issues. The personnel would realize environmental problems, and at the end would lead to harmoniously adjust their living with environmental us the end of the environmental education (Winai Wirawatthananon : 2011), Also all of the learning activities aimed for the personnel with differences in gender, age and level of education to have understanding and awareness of environment together and to appreciate environment. The personnel agreed that the problems of environment were public problems without indicating that they were problems of having differences in gender, age and level of education. However these were several research studies which found that people with different genders after learning by organizing different activities would receive different learning results: (Erickson and Erickson : 1983).
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REFERENCES