Application of Environmental Awareness and Environmental Management System towards Behavior at Palm Cooking Oil Company, Bekasi City

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Abstract. Environmental pollution generally occurs because of the behavior of workers who are not environmentally friendly. The purpose of this research is to analyze the relationship of environmental awareness to the behavior of workers of palm cooking oil company; examine the relationship of implementation of ISO 14001 environmental management system to the behavior of workers; analyzing the relationship of implementation of ISO 14001 environmental management system and environmental awareness simultaneously to the act of workers. The results were processed by univariate, bivariate, and multivariate methods. The results of the analysis show a weak and unidirectional relationship between environmental awareness and employee behavior with correlation value (R=0.23). Different results on the ISO 14001 environmental management system with worker behavior. The results show no relationship between the ISO 14001 environmental management system and workers' behavior with correlation values (R=0.39). While the correlation between environmental awareness and ISO 14001 environmental management system to worker behavior showed a strong correlation with correlation value (R=0.56). The conclusion that can be drawn from the results of the analysis is the awareness of the environment plays an essential role in the behavior of workers in the environment. Corporate programs such as the ISO 14001 environmental management system can not run effectively without the support of environmental awareness.

1. Introduction
Sustainable development is one of the alternatives undertaken to ensure environmental sustainability to meet the needs of present and future generations. An essential component of sustainable development consists of three main pillars, namely environmental pillars, economic pillars and social pillars. The implementation of EMS ISO 14001 provides a gradual, systematic, efficient and sustainable environmental improvement [1]. Positive benefits of the system approach are the anticipation of short-term and long-term impacts of environmental aspects of environmental conditions and business activities, as well as relationships with governments and consumers [2]. Lack of awareness and worker participation in the environment at work that elicits behavior does not care about environmental management [3]. On the description formulated research questions as follows:

Is there a relationship of environmental awareness to the behavior of workers?
Is there any relation of implemented ISO 14001 environmental management system to worker behavior?
Is there a relationship between implemented ISO 14001 environmental management system and environmental awareness simultaneously with workers behavior?

The purpose of this research is to analyze the relationship of environmental awareness to the behavior of workers of palm cooking oil company; investigate the relationship of implementation of ISO 14001
environmental management system to the behavior of workers; analyzing the relationship of application of ISO 14001 environmental management system and environmental awareness simultaneously to the behavior of workers.

Environmental psychology is a branch of psychology that discusses human behavior with the surrounding physical environment, the process of human perception and cognition is more important than the study of behavior is visible (overt behavior). Human behavior is more caused by processes of perception. Objects, perception, and settings are a unity in the perception process [4]. Environmental consciousness is defined as a state of conscious mind capable of controlling the mind and being able to choose such things as good and bad. Another definition of environmental awareness is the condition in which there is a feeling for the environment, and each shows it through action and behavior. Binding communication can be useful for raising awareness [5]. Environmental awareness is critical in realizing environmental sustainability [6]. Studies conducted by the author show that the development of awareness in Indonesia is now growing significantly in various fields, especially in the field of educational institutions [7], and especially in the industrial sector. Greater environmental awareness leads to greater involvement in land management programs [8]. The effort involves every citizen in growing and nurturing awareness to preserve the environment based on the values, that is the value of the environment itself with the philosophy of living in peace with the natural environment [9]. Definition of Environmental Awareness on this research is thought that underlies the behavior to preserve the environment in the company.

Environmental Management System (EMS) ISO 14001 is a document of environmental management system specification. This Standard contains elements to be met by companies seeking certification for the implementation of the ISO 14001 EMS standard. All elements specified in ISO 14001 must be implemented and documented to obtain certification from a third party certification body. The documentation of all elements that have been applied is used as the responsibility of the certification body that the organization or company has implemented and implemented the EMS ISO 14001 suitably [11]. EMS ISO 14001 on this palm cooking oil company used to comply with regulations and responsibilities to support environmental protection, prevent pollution, and gain economic benefits through improvements in overall environmental performance [10]. Definition of Environmental Management System on this research is a program designed to compensate for environmental problems that occur as a result of operations in the company. The differences in the psychological and behavioral variables related to respondents’ awareness of EMS [11]. EMS factors such as regulatory agency bureaucracy have a firm rule for that support pro-environmental behavior [12].

The notion of behavior is a collection of one's life experiences that encompasses the interaction of the individual with his or her environment embodied in the form of the individual's knowledge, attitude, and actions [13]. Behavior is a response to the stimulus received by the individual from the outside [14]. This response is divided into two, namely:

a. Reflexive is the response generated by specific stimuli. Commonly called eliciting stimulation which results in a relatively fixed response;

b. The operant response is the response that arises and develops then followed by a certain stimulus or stimulation. This stimulation is called reinforcing stimulation.

Behavior can also be said as an individual reaction to the stimulus received. Individual reactions to various stimuli are two things: active reactions and passive reactions. Active reactions occur when the individual receiving the stimulus reacts in the form of real action. The behavior can be divided into two:

1. Internal factors, namely individual characteristics are innate, for example the level of intelligence, emotional level, and others.

2. External factors, i.e. environmental influences, whether physical or non-physical, socio-economic, and cultural. Environmental factors are generally the main factors affecting one's behavior.

While the passive reaction is when individuals give a reaction such as thinking, opinion, attitude. Behavioral forms are divided into three domains with terms of knowledge, perception, and action [15].
Knowledge is generally derived from the sense of sight and hearing. Educational factors significantly affect one's consciousness. This issue is due to the higher a person's education, the more expert knowledge he or she possesses [16].

The definition of perception is a person's interpretation of the stimulus received by the person through the sensing device [17]. Workers who do not yet have a good perception of environmental awareness. Judgment is formed from the observation of an object, which is subsequently concluded in various forms that depend on the attention of the individual who made the remarks.

The higher the attention of the individual in observing something, the better will be in response to the object [18]. Based on the development of action is a mechanical response to the stimulus received, whereas behavior is an active and creative mental process [19]. The behavior of individuals and groups is influenced by the social, cultural and personal systems of each. The pro-environmental atmosphere and a consistent sustainability policy might significantly foster pro-environmental behaviors [20]. In the process of behavioral change, there is a theory of learning Classic conditioning and Operant Conditioning [21]. Definition of worker behavior in this research is all activities of the workers during the operational activities in the company.

2. Method

This research uses a quantitative approach with the method used in this research is a mixed method between quantitative and qualitative methods. The research location is in the working area of the Palm cooking oil company located in the City of Bekasi, West Java Province, Indonesia. The sample takes by simple random sampling by using the Slovin formula:

\[ n = \frac{N}{1+N \alpha^2} \]  

Information:
- \( n \) = Number of samples
- \( N \) = Number of Population
- \( \alpha \) = Errors 5%

With a total population of 314 Workers, this calculation uses a percentage error of 5% in the calculation. The result of the calculation resulted in the minimum number of sample to be the respondent is 176 people, to anticipate the unusable result from the existing sample, the number of samples plus 10% from the minimum sample amount. The total sample size for this research is 194 people. This research was conducted to get correlation value between environmental awareness variable, environmental management system, and worker behavior. Before performing correlation analysis, data collection will be performed for the validation test and reliability test on the questionnaire to be used.

3. Results and discussion

Validation and Reliability

The research begins by performing validation and reliability tests on the instruments used. The validity test of environmental awareness instrument with 18 items of the question was obtained by 18 items of a valid question. the reliability test was for this environmental awareness instrument obtained alpha value of 0.934> 0.361. In the validity test of EMS ISO 14001 instrument obtained 8 valid question items from the number of 8 questions. Reliability test which for instrument EMS ISO 14001 obtained alpha value 0.896> 0.361. Invalidity test instrument obtained 8items valid question from the number of 8 questions. Reliability test where for the behavior instrument obtained the alphavalue of 0.810> 0.361. The results of validity and reliability of the items on the questionnaire said to be reliable or reliable as a means of collecting data on research.
Environmental Awareness Relation to Worker Behavior

The result of correlation test of environment awareness variable to a behavioral variable to 194 sample that chosen by random has obtained the value of significance equal to 0.001 which means calculation value <0.05 so concluded that there is a relation between environmental awareness and behavior variable. Based on the value obtained from the calculation of the value of the Pearson correlation of 0.23. A value of 0.23 provides a clarification of the known relationship test if the environmental awareness and behavioral variables have weak relationships. As for the direction of the relationship is a positive relationship, which means if the value of environmental awareness variables increases, then the value of behavioral variables also increase.

| Table 1. Environmental Awareness Correlation Test against Behavior |
|---------------------------------------------------------------|
| Korelasi | Environmental Awareness | Behavior |
| Environmental Awareness | *Pearson Correlation* | 0.230** |
| Sig. (2-tailed) | 0.001 |
| N | 194 | 194 |
| Behavior | *Pearson Correlation* | 0.230** |
| Sig. (2-tailed) | 0.001 |
| N | 194 | 194 |

Workers' knowledge of the environment is derived from the formal and non-formal education of such workers such as counseling, discussions, exercises, and others. The worker's knowledge comes from the observation of the worker using his or her senses, such as the eyes and ears. In line with the notion that knowledge is acquired by man through the means of his thoughts, especially the eyes and ears [22].

Behavior as desire, interest, will, knowledge, emotion, attitude, motivation, reaction, etc. and other factors such as experiences, beliefs, physical means, socio-cultural society and so on. Thus the low relation between environmental awareness and worker behavior can be caused by several factors [23]. Factors that affect environmental awareness consist of ignorance, poverty, humanity, and lifestyle. The lack of socialization and direction towards workers in the field leaves workers with no long-term thinking about the impact of their actions that pollute the environment [24].

Relation of Implementation of the environmental management system to Worker Behavior

The result of correlation test of the variable of EMS ISO 14001 to behavioral variable got the value of significance equal to 0.339 which mean calculation value>0.05 so concluded that there is no relation between the variable of ISO 14001 and EMS behavior.

| Table 2. EMS ISO 14001 Correlation Test against Behavior |
|--------------------------------------------------------|
| Korelasi | EMS ISO 14001 | Behavior |
| EMS ISO 14001 | *Pearson Correlation* | 0.069 |
| Sig. (2-tailed) | 0.339 |
| N | 194 | 194 |
| Behavior | *Pearson Correlation* | 0.069 |
| Sig. (2-tailed) | 0.339 |
| N | 194 | 194 |

Based on the results of a correlation test between the variable EMS ISO 14001 with the behavior of workers. Value test results correlation variable EMS ISO 14001 to behavioral variables obtained the value of significance of 0.339 which means the calculation value>0.05. If the value of significance <0.05, then correlated. If the value of significance>0.05 then not correlated. Based on the test results
obtained conclusion there is no significant relationship EMS ISO 14001 with employee behavior, so Ha rejected, and H0 accepted.

The problem of implementing EMS ISO 14001 in an organization or company so not getting the benefit as it should is the lack of commitment from the top that makes the employees are not eager to run the system. The lack of socialization of management on all elements in the company, so that knowledge workers are inadequate to run the system. Lack of awareness and worker participation in the environment at work that leads to uncaring behavior towards environmental management [25].

For This Company, the absence of a relationship between the ISO 14001 EMS variable and the worker's behavior may be the lack of training or socialization of each worker and the lack of attention, awareness, and the participation of workers towards its application. Therefore, the high workload with limited time targets makes workers tend to focus their attention to complete the work and assume EMS ISO 14001 is only a formality that must be met. So in full awareness, they understand about EMS ISO 14001, but not apply it in everyday life.

Relation of Environmental Awareness and Implementation of the environmental management system to Worker Behavior

Relationship of environmental awareness and EMS ISO 14001 simultaneously to workers behavior, used multiple regression testing. The level of trust used in this test is 95% to test the hypothesis "There is an influence of environmental awareness (X1) and EMS ISO 14001 (X2) together on Behavior (Y)" under the following conditions:

1. If sig value <0.05 then there is the influence of variable X Simultaneously to Y;
2. If the value of sig> 0.05 then there is no influence of variable X Against Y.

Table 3. Multiple Regression Test of Environmental Awareness and ISO 14001 EMS against Behavior

| Model   | Sig. |
|---------|------|
| 1       | 0.004b |
| Regression |      |
| Residual |      |
| Total    |      |

The value of significance for the effect of X1 and X2 on Y is 0.004> 0.05 so that it can be concluded that the hypothesis is accepted which means there is the influence of X1 and X2 simultaneously to Y. R square value of 0.56 this means that the effect of variables X1 and X2 simultaneously affect 56% of variable Y. This shows the better environmental awareness and understanding of workers to EMS ISO 14001, will make the behavior of workers better too. Environmental awareness variables form the basis of changes in workers' behavior to care for the environment, it is better to be collaborated with a good understanding of ISO 14001 EMS to support environmentally friendly behavior. The relationship between environmental awareness and implementation EMS ISO 14001 to the behavior of workers is the better the environmental awareness and understanding that workers have of EMS ISO 14001, the better the worker's behavior. A worker who has good environmental awareness and good understanding implementation EMS potentially have better behavior to the environment. If the worker has proper knowledge, good perception, and good action will support worker to have good behavior toward the environment. Good environmental awareness and good implementation of EMS ISO 14001 will further support changes in employee behavior better in their work.

4. Conclusion

There is a weak relationship between environmental awareness of the behavior of workers. There is no relationship between SML ISO 14001 with the behavior of workers. There is a relationship between environmental awareness and SML ISO 14001 applied simultaneously to the behavior of workers. This
study concludes that there is a weak relationship between environmental awareness of the behavior of workers if it stands alone. In contrast to the ISO 14001 EMS relationship with employee behavior when applied separately to give no significant correlation. Furthermore, environmental awareness and EMS ISO 14001 applied simultaneously will affect on the behavior of workers of a Palm cooking oil company on Bekasi City.

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