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The Effect of Education Level on Farmer's Behavior Eco-Friendly to Application in Gowa, Indonesia

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Abstract. This study aims to determine the level of education of horticultural farmers and their effect on behavior in the application of eco-friendly agriculture in Gowa regency. This research is a survey type, sampling with simple random sampling system. Data collection techniques using questionnaires. Data analysed with descriptive and regression statistic technique, A total seventy-five farmers as respondents. The results of the level of education of the farmers showed that seventy-five horticultural farmers sample, obtained the distribution of primary school frequency 33.3%, and 41.30% senior high school 22.7% senior high school, and graduate education easy 2.7%, farmers of most Junior High Schools. The result of free variable analysis with dependent variable, shows that, correlation coefficient is 0,786 it means have strong relation with education level to farmer behavior in application of environmentally friendly agriculture. The result of coefficient of determination showed 61.80% of farmer's behavior of environmentally friendly farming in Pattapang Village Gowa Regency of Indonesia. Suggestion, To the government and stakeholders to conduct eco-friendly agricultural counseling and training continuously to horticulture farmers.

1. Introduction

The conventional agricultural policy applied by the government is so industrial, so it tends to waste renewable energy, exploitative natural resources oriented to increase production, especially food. Tens of millions of farmers are made heavily dependent on the use of superior seeds, synthetic fertilizers, and chemical pesticides that are wasteful of energy and environmentally destructive. In the early use of agrochemicals can increase production, but ultimately decreased land productivity and increased environmental pollution and increased risk of harm to public health and consumers.

The emergence of environmentally friendly farming system as an alternative to tackling the crisis in conventional agriculture aimed at maintaining biodiversity and soil conservation. Eco-friendly farming is now being popular in Indonesia, in fact it has been very late in coming. In developed countries the system of environment-friendly agriculture using chemical ingredients of non-synthetic success already underway since the 80s, i.e. Since the movement of the green revolution that the synthetic chemistry department has been negatively impact the sustainability of land use and the environment as well as interfere with human health.

The fulfillment of the needs of horticultural products for safe consumption so eco-friendly agriculture need to be developed. Environmentally friendly farming is an agricultural system that is holistic and integrated. Aimed at improving and developing the health and productivity of



agroecosystem natural way, so was able to produce a quality and sustainable food. The main goal of environment-friendly agriculture is to develop sustainable productive activities as well as harmonious with the environment [1], Agricultural waste products and technological innovations that use biotechnics are the components needed to achieve sustainability development.

Sustainability or an agricultural system of agro sustainability ecosystem largely determined by the ability of farmers in coping with the problem of (the threat) farming in land either at this time or in the foreseeable future. Environmentally friendly farming emphasizes the use of management practices that favour local resources. This can be achieved by means of cultural, biological, and mechanical is the antithesis of the use of synthetic materials [2]. Environmentally friendly technologies include as low cost technology for sustainable production.

Some research has reported that the eco-friendly farming can give you an advantage, both in terms of the environment as well as in terms of the economy. The advantages in terms of economy primarily expected from premiums earned and low maintenance costs. The principles of environmentally friendly agriculture is an alternative that is a farmers ' livelihood improvement in the (economic), land resources utilization of sustainability (ecology), and finally realize the fairness in trade which is expected to take place until the next generation.

2. Research Methods

The survey method, with a quantitative research category based on data type and analysis [3], in Pattapang Village, of Gowa Regency, in January-March 2017. A total seventy-five male and female respondents with random sampling system, data analysis techniques with descriptive statistics and regression, using a structured questionnaire containing items to measure the effect of educational level on the behavior of eco-friendly horticultural farmers in agricultural applications. The variable research, that is independent variable of farmer education level (X), and dependent variable of horticultural farmer behavior (Y).

3. Research Results

3.1. Level of Education Towards Behavior of Horticultural Farmers

Based on the results of a statistical analysis of the farmers 'level of education shows that from 75 mostly horticultural farmers have the first high school level of education, from the frequency distribution retrieved 25 Farmers educated primary school or 33.3 percent and 31 junior high school educated Farmers or 41.3 per cent, then 17 farmers high school educated or 22.7 percent, educated farmers and 2 diploma or 2.7 percent.

The magnitude of the contribution rate of education against the behavior of the horticulture farmers in the Application of eco-friendly agriculture, as seen on the test model analysis Table 1.

Table 1. Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.786 (a)	.618	.602	7.716

Table 1 results of the analysis of the coefficient of correlation between the free variables with variables bound, provide information that, the correlation coefficient (R) of 0.786 means going on strong relationships with educational level against the behavior of farmers in the application of eco-friendly agriculture.

Furthermore the results of the analysis of the same coefficient of determination (R^2) obtained the value of 0,618 mean percentage of farmers ' behaviour in the magnitude of the application of eco-friendly agriculture, 61.8% and the rest of 38.2% related to variables beyond those used in this study.

The magnitude of the influence of the variable levels of education against the variable behavior of farmers in the Applicationof eco-friendly agriculture, Anova analysis results obtained in Tabel 2.

Table 2. Summary of Anova test (b)

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	6828.871	1	2276.290	38.237	.000
Residual	4226.676	71	59.531		(a)
Total	11055.547	74			

Table 2 Anova analysis results obtained F 38.237 calculate the significance value 0.000. Therefore the probability value smaller than 0.05, then this model can be used to predict the behavior of the horticulture farmers in the application of eco-friendly agriculture in the village of Pattapang Gowa Regency.

The regression equation coefficients model of the next level of education against the behavior of the horticulture farmers can be seen in Table 3.

Table 3. Coefficients(a) Dependent Variabel

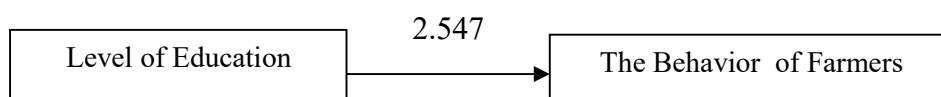
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (contant)	12.650	14.850		.852	.039
Level of Education	2.547	1.478	.171	1.723	.049

Table 3 coefficients of level of education against the behavior of the farmer explained that the coefficient regression equation $\bar{y} = a + b_1X_1$, Y is the value of horticultural farmer behavior estimates in the application of eco-friendly agriculture, and the (X_1) is the level of education, with a constant value of 12,650, further education rate coefficient values (X_1) 2,547, this value can be explained that, if the level of education a farmer increased by 1 level then the value score also increases farmers ' behavior of 2,547 so the equation regrestion is $\bar{y} = 12,650 + 2,261 X_1$. Description:

\bar{y} = The behavior of the horticulture farmers

X_1 = Level of education.

Furthermore it can be seen in Figure 1, models and research results by using regression analysis, and influence between the independent variable and the dependent variable is education level behavior of horticultural farmers in the application of eco-friendly agriculture.

**Figure 1.** The Model Research of Regression

Then based on the results of the test show the value of coefficient significant educational level is smaller than the value of α , namely $0.049 < 0.05$. This shows the level of education give influence on the behavior of farmers in the application of eco-friendly agriculture.

Furthermore based on test results t and regresinya models, the regression coefficients that level of education towards the farmers ' behavior is positive-valued 2.547 this means there is a positive relationship between the level of education with the horticulture farmers behaviour. So any one level of education will lead to an increase in farmers ' behavior amounted to 2.547 in application of eco-friendly agriculture in Pattapang Village of Gowa Regency.

These results are in line with the results of the research are [4], that the level of education of community behavior significantly to influential village and subdistrict Springs Rio Flores in keeping in maintaining environmental quality. Similarly [5], found a positive effect of education level against the behavior of the community in environmental sanitation in district Bontoa in Maros Regency.

While [6] find a level of education by the influential real farmers against the participation of farmers into agribusiness development program of hybrid corn. And according to [7] (Buletén Greetings of Justice Germany) that in order to help the farmers, then the generation of its human resources must be farmers with an adequate education.

3.2. *The Behavior of Farmers Horticultural*

Human behavior is a very interesting thing for studied because the behavior is a human activity that can be observed. According to [8], that the behavior is everything made by man and his movement can be observed by others. While according to [9] that the person's behavior with regards to body shape under from birth and still allow it to be influenced by the environment. And according to [10] that the behavior of farmers in managing environmentally farmland is farmers' activity in the utilization of renewable resources and resources can not be updated by pressing the negative impact on the environment is minimal as possible.

Results of statistical analysis that behavior horticultural farmers from 75 farmer, there are 56 farmers, or 74.67 percent, and has a category of behavior with a 59-92 value, this value being classified as behavioral categories (sometimes) in the applications of eco-friendly agriculture, and 18 votes or 24.00 percent of farmers have high behavior, whereas in the low category only one farmer, or 1.33 percent.

The results are consistent with the results of research to [11] that the behavior of farmers in pest control in district Tabanan, including in the medium category this case allegedly closely associated with the level of education of farmers. Similarly, the results of research to [12] that seaweed farmers in Kupang district average behavior in the medium category.

Based on interviews with farmers obtained information that the application of eco-friendly farming is not fully 100 percent implemented, where farmers have absolute use environmentally friendly fertilizer but on the other hand they are also still using artificial fertilizers such as urea, although the dose has been reduced. As for the control of pests and diseases with chemical pesticides farmers have been reducing the dose use. Behavior of farmers in the study site has included major advances, but what is done is still not fully meet the expectations of environmentally friendly agriculture.

Therefore, in the farming environment-friendly use of inorganic materials including fertilizers and pesticides at all is not allowed. According to [13] that organic farming is an agricultural production system that prevent or override the use of the synthetic compound good for fertilizer, pesticides, as well as growing substance. Next [14] suggests that the behavior of pest control of crop diseases of vegetables, the respondents have a positive attitude and are correlated against behavior of farmers in the control of pests and plant diseases of vegetables.

4. Conclusion

From the results of the analysis of the research data it can be concluded that:

- a. Level of education the average horticulture farmers reached junior high school, which had a positive influence, and significantly to the behavior of farmers in the applications of eco-friendly agriculture in the Pattapang Village of Gowa Regency.
- b. Behavior horticultural farmers in medium category, or sometimes apply environmentally friendly farming, and quite good although not maximized so that still needs to be improved in order to achieve the applications of eco-friendly agriculture as a whole, in the Pattapang Village of Gowa Regency.

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