

The Influence of Attitudes and Subjective Norms on Interest in Using Certified Seedlings in Smallholder Plantation (Case Study: Sei Tarolat Village Farmers)

Pengaruh Sikap dan Norma Subjektif Terhadap Minat Penggunaan Bibit Bersertifikat Pada Perkebunan Rakyat (Studi Kasus: Petani Desa Sei Tarolat)

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ABSTRACT

The purpose of this study was to analyze farmers' assumptions in the use of certified seedlings on oil palm and analyze efforts that could improve farmers' understanding of the use of certified seedlings. This study was conducted in Sei Tarolat Village, Bilah Hilir District, Labuhan Batu Utara Regency. The study was conducted for 61 days starting from March to April 2020. Sampling was done using a purposive technique with a sample of 100 respondents. The method chosen for data analysis was the SEM (Structural Equation Model) method which was operated using the SmartPLS 3.0 program. The results of this study could be concluded that attitudes can influence the interest in using certified seeds in Sei Tarolat Village, Bilah Hilir District, Labuhan Batu Utara Regency and subjective norms can also influence the interest in using certified seeds in Sei Tarolat Village, Bilah Hilir District, Labuhan Batu Utara Regency.

Keywords: attitude, certified seedlings, interest, subjective norm

ABSTRAK

Tujuan penelitian ini adalah untuk mengetahui asumsi petani dalam penggunaan bibit bersertifikat pada kelapa sawit dan menganalisis upaya yang dapat meningkatkan pemahaman petani terhadap penggunaan bibit bersertifikat. Penelitian ini dilakukan di Desa Sei Tarolat Kecamatan Bilah Hilir Kabupaten Labuhan Batu Utara. Penelitian ini dilakukan selama 61 hari dimulai bulan Maret sampai dengan April 2020. Pengambilan sampel dilakukan dengan menggunakan teknik *purposive* (sengaja) dengan sampel sebanyak 100 responden. Metode yang dipilih untuk analisis data adalah uji pengaruh dengan SEM (*Structural Equation Model*). Hasil penelitian ini dapat disimpulkan bahwa sikap dapat mempengaruhi minat penggunaan bibit bersertifikat di Desa Aek Sei Tarolat Kecamatan Bilah Hilir kabupaten Labuhan Batu Utara dan Norma Subjektif juga dapat mempengaruhi minat penggunaan bibit bersertifikat di Desa Aek Sei Tarolat Kecamatan Bilah Hilir kabupaten Labuhan Batu Utara.

Kata Kunci : Bibit Bersertifikat, Sikap, Norma Subjektif, Minat

INTRODUCTION

Nowadays, palm oil plantations are growing rapidly into a huge profitable plantation so that many forests and old plantations have been changed or converted into new oil palm plantations. Data from the world Food and Agriculture Organization (FAO), under the auspices of the United Nations, stated that Indonesia is the number one palm oil-producing country among ASEAN and the world, and the largest exporting country. Indonesia, as the number one palm oil-producing

country in the world, has set a target that in 2020 it will produce 40 million tons of crude palm oil. In order to meet the target, the Indonesia government is focusing on developing superior seedling so that the productivity of palm oil products can be achieved. Superior and high-quality palm seeds are the product of a crossover or often called hybrids, but many of oil palm plantations especially smallholder plantations use illegitimate seeds or low-quality seeds resulting much lower productivity compared to the crossover seed (Hybrid).

The Indonesian palm oil farmers association said, from their assessment that at least 60% of smallholder palm oil in Indonesia come from non-hybrid seeds which certainly have an impact on the result of production.

Using certified seeds or seedlings is a way and form of effort to be able to change the farmer's behavior and their families in order to know, want and able to solve problems in the productivity of oil palm plantations that are being developed. Farmers often encounter problem in decision making regarding the implementation or change and development of their agriculture business in the future. It is because too many considerations are taken into account before making decision. The process of adopting certified palm seeds requires intense communication that should be done effectively as the farmers will psychologically analyze it based on the desire and need before adopting the seeds. The understanding or perspective of the farmers regarding innovation is shaped through the process of choosing or filtering information they gathered. Farmers' perspective certainly affects decision making and implementation steps of the innovation in the future. Effective communication occurs only if the perception between the messenger and the farmers as message receiver is corresponding regarding the information. This perspective will be being a part of totality of the process that will result feedbacks when the target is stimulated by the environment (Sobur, 2003).

The optimality of palm harvest productivity will be increased when certified seeds and other production inputs are used appropriately. On the other side, the limited information gathered from their experience affects farmers' interest to adopt certified seeds.

This study used framework of thinking as follows:

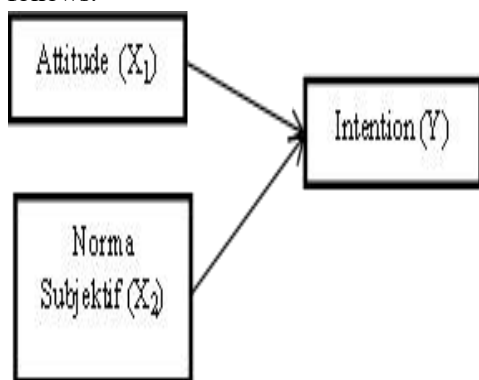


Figure 1 Framework of Thinking

Proposed hypothesis of this study was that subjective norms and society attitude affect farmers' interest to use certified seeds.

METHOD

This study was conducted in Sei Tarolat Village, Bilah Hilir District, Labuan Batu Utara Regency. The study was conducted within two months, starting from March until April 2020. Independent variable of this study was subjective norms and attitude, while the dependent variable was farmers' interest.

The number of respondent was determined through the calculation of sample determination formula developed by Slovin. This formula was used to determine the minimal number of sample taken in research population. Slovin's formula used in this study was:

$$n = \frac{N}{1 + Ne^2}$$

n : number of sampel

N : Population size

e : tolerable sampel taking error (10%)

$$n = \frac{832}{1 + 832(0,1)^2}$$

$$n = \frac{832}{1 + 832(0,01)}$$

$$n = \frac{832}{9,32}$$

$$n = 90$$

Based on the calculation using Slovin's formula, it was found that minimum sample number is 90 respondents. In order to increase the accuracy of this study, 100 respondents were chosen from the farmers in Sei Tariolat village, Bilah Hilir District, Labuhan Batu Regency.

The research method specified in this study was data analysis using the Structural Equation Model method or often referred to as SEM with the SmartPLS 3.0 program.

Partial Least Squares or PLS is a statistical analysis similar to Structural Equation Model which is able to perform analysis for both latent and indicator variables and direct measurement errors. Partial Least Square is a developed statistical model as an alternative when the theory used is weak. Moreover, the indicators present were insufficient for the reflective measurement model (Wiyono, 2011).

The model specification in this study was path analysis. The path analysis mathematically is a model without constants or standardized regression. Thus, this study aimed to compare different predetermined paths. The test results considered the structural model by observing, appraising, and evaluating the results of the inner model. It observed the relationship between the latent constructions by looking at the estimated results of the path parameter coefficient and its level of significance.

RESULTS AND DISCUSSION

Sei Tarolat is one of the villages in Bilah Hilir district, Labuhan Batu regency, North Sumatra. It is located at east of the capital Labuhan Batu Regency around 50 km from the Rantauprapat town. Its area was approximately 24,896 km². The boundaries of Bilah Hilir district were as follows:

- The north is bordered by the Cuwo Labuhan Batu sub-district
- The west side is bounded by the Pangkat sub-district
- The east is bordered by Tj.Haloban
- The south is bordered by Pane Hulu.

This study used primary data. The data obtained directly from questionnaires. The questionnaire consisted of a series of written questions designed to collect information from respondents. This questionnaire was distributed to oil palm growers on a scale of 1 to 5, with 1 indicating the strong disagreement and 5 indicating the strong agreement. This questionnaire was distributed to up to 100 interviewees from smallholder oil palm plantations. The 100 respondents was a sample of all palm oil producers in Seo Tarolat village, Bilah Hilir district, Labuhan Batu regency.

| Outer Loadings | | Outer Loadings | | Outer Loadings | |
|----------------|-------|----------------|---------------|----------------|-------|
| Matrix | SVAP | Matrix | NORMA SUBE... | Matrix | MDVAT |
| V01.11 | 0.923 | V02.9 | 0.958 | VT.1 | 0.930 |
| V01.3 | 0.923 | V02.5 | 0.957 | VT.3 | 0.907 |
| V01.7 | 0.916 | V02.2 | 0.944 | VT.2 | 0.861 |
| V01.5 | 0.913 | V02.3 | 0.939 | | |
| V01.9 | 0.871 | V02.8 | 0.921 | | |
| V01.1 | 0.863 | V02.4 | 0.921 | | |
| V01.6 | 0.863 | V02.7 | 0.787 | | |
| V01.2 | 0.860 | V02.1 | 0.795 | | |
| V01.4 | 0.859 | | | | |

Figure 2. Loading Factor

The loading factor results which were performed in Figure 2 showed that the variables had loading factor value > 0.5

| Construct Reliability and Validity | | | | |
|------------------------------------|------------------|----------|-----------------------|----------------------------------|
| Matrix | Cronbach's Alpha | ρ^2 | Copy to Clipboard | Excel Format |
| | Cronbach's Alpha | ρ^2 | Composite Reliability | Average Variance Extracted (AVE) |
| MDVAT | 0.882 | 0.887 | 0.927 | 0.810 |
| NORMA SUBE... | 0.968 | 0.970 | 0.973 | 0.821 |
| SVAP | 0.966 | 0.967 | 0.971 | 0.789 |

Figure 3. Average Variance Extract

Based on the score generated from the average variance extracted is > 0.5. In Figure 3, the average variance extracted score is higher than 0.5, namely 0.789 for attitude, 0.821 for subjective norms, and 0.810 for interest. So, the construct has a good convergent validity score.

| Construct Reliability and Validity | | | | |
|------------------------------------|------------------|----------|-----------------------|----------------------------------|
| Matrix | Cronbach's Alpha | ρ^2 | Copy to Clipboard | Excel Format |
| | Cronbach's Alpha | ρ^2 | Composite Reliability | Average Variance Extracted (AVE) |
| MDVAT | 0.882 | 0.887 | 0.927 | 0.810 |
| NORMA SUBE... | 0.968 | 0.970 | 0.973 | 0.821 |
| SVAP | 0.966 | 0.967 | 0.971 | 0.789 |

Figure 4. Cronbach's Alpha and Composite Reliability

The test results showed that the score at Cronbach's alpha is higher (>) than 0.6, while the score of the composite reliability limit score is higher (>) than 0.7. Based on Figure 4, it shows that the Cronbach Alpha score on the attitude variable is 0.966 above 0.6, the subjective norm is 0, 968 above 0.6, and interest is 0.882 above 0.6,

while the composite reliability value of attitudes, subjective norms, and interest above 0.7.

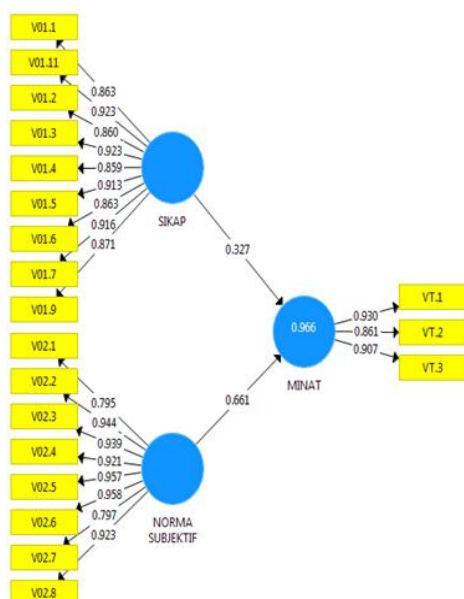


Figure 5. Outer Model

Structural Testing of the Model

Testing was done on the inner model or structural model to be able to see the relationship between the constructs, the significance values, and the R-square of the proposed research model. The structural model was evaluated using the R-square for the dependent construct of the t-test and its significance. In assessing the structural model through Partial Least Square, it can be started by looking at the R-square for the latent dependent variable.

The results of data processing using the help of SmartPLS software show that the R-square score of the interest variable is 0.966. This means that 96.6% of the interest variable can be influenced by independent variables of attitude and subjective norms. Meanwhile, the remaining 3.4% influenced by other variables beyond being researched.

Hypothesis Testing

The estimated significance score of the parameters showed useful information for the relationship between the research variables. The basic foundation used to test the hypothesis is the score that is in the output path coefficients. In Partial Least Square, statistical testing is that each hypothesized relationship performed using simulation and with this case using the bootstrap method of the sample. Testing through bootstrap is also intended to minimize the occurrence of data abnormalities in research. The results of the

bootstrap test from the Partial Least Square analysis are as follows:

| Path Coefficients | | | | | |
|--------------------------|--------------------|------------|-------------------|------------------|----------|
| Mean, STDEV, T... | Confidence Inte... | 2 | Copy to Clipboard | Excel Format | R Format |
| | Original Sampl... | Sample ... | Standard Devia... | T Statistics ... | P Values |
| NORMA SUBJEKTIF -> MINAT | 0.661 | 0.648 | 0.125 | 5.305 | 0.000 |
| SIKAP -> MINAT | 0.327 | 0.340 | 0.127 | 2.567 | 0.011 |

Figure 6. t-Statistic Test

Attitudes toward interest in the use of certified seeds

The value of t-statistic showed that attitude variable influences the interest in the use of certified seeds which is proven by the value of t-statistic by $2.567 > 1.66$ and with the significance of P value < 0.1 that is 0,000. The original value of estimate sample is positive by 0.327 which indicates that the effects of interest in the use of certified seed is positive. Thus, the hypothesis in the study is accepted stating that "public attitudes have an impact on the use of certified seeds."

Subjective Norms towards the Interest in the Use of Certified Seeds

Based on the value of t-statistic, it displays that subjective norms is affected towards the use of certified seed. It is proven from t-statistic value that is $5.305 > 1.66$ and the significant of p value < 0.1 at the ratio of 0.011. The original value of estimate samples is positive by 0.661 which indicates that the effect of subjective norm on interest in the use of certified seed is positive, and thus the hypothesis in the study is accepted stating that "societies' subjective norms influence on interest of the use of certified seeds".

Based on the statistical calculations having already been done, it could be concluded that community attitude construction has had an impact on interest in the use of certified seeds. Therefore, the H1 of hypothesis in the study is accepted.

An attitude is an individual's positive or negative feeling towards a desire to behave. it can also be defined as the amount of emotion

felt by the individual to be able to receive or reject a particular object or behavior and can be measured using a procedure that puts the individual at an evaluative scale.

Studies have shown that the impact of palm farmers' attitudes in Bilah Hajar District, Labuhan Batu Regency towards interest in the use of certified seeds have shown that farmers have a positive attitude and behavior to use them to increase harvest or production. This positive disposition surely requires strong assurance in the use of certified seeds, farmers' assurance is certainly generated by the amount of information received and that they believe to be referral material for licensed seed use from specific organizations.

Based on the results of testing the H1 hypothesis above, the study coincides with previous studies carried out by Nurtantiono (2011) and also study carried out by Hair et al (2010) in which both studies produce attitudes that influence the interest in the use of certified seeds.

Based on the statistical calculations having already been done, it can be concluded that subjective norms of society influence interest in the use of certified seeds. Therefore, the H2 of hypothesis in the study is accepted.

Subjective norms are individual's views or perceptions of others' beliefs that will influence behaviors they currently foster, pointing to subjective norms because of relation with individual's views or perceptions of social pressure as well as other people's beliefs that will influence in performing or not performing the behaviors they are creating. Such social pressure can come from one or more people in the vicinity, such as from friends, family and workmates, and a group of important people.

Studies have shown that the subjective norms of palm oil farmers in Bilah Hilir District, Labuhan Batu Regency towards interest in the use of certified seed has shown that they have high trust in families, associates or people they consider to be experts in certified seed groups have shaped their positive behavior to use referrals from those people in the use of targeted seeds.

Based on the results of the H2 hypothesis testing, the study supports a previous study by Sigit (2006) and conducted by Marhaini (2008) stating analysis, a consumer purchase of brands and Kariyasa (2013) a financial analysis of the

use of certified palm seed in the west Kalimantan province.

CONCLUSION

The results of this study are based on data processing and discussion by authors among them that people's attitudes affect interest in certified seeds and societies' subjective norms affect interest in the use of certified seeds.

Suggestion

Based on the results of the study may be offered this suggestion:

1. Based on the results of studies on the effects of attitude subjective norms towards interest in the use of certified seed in the societies' farm (a study of palm oil farmers in Bilah Hilir District, Labuhan Batu Regency in North Sumatera is still needed to be developed for further research in the future. The research should also be done in different areas, in order to help farmers increase production. It is also good to add variables, since this research limits the variables only two. In addition, seed sellers should come to farmer directly without mediators and give significant result in the production, so it can improve the unstable economy of the farm societies

2. Further study is recommended to consider searching for or adding other factors that can influence interest in using certified seeds.

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