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ANALYSIS OF FACTORS THAT AFFECT THE CAPITALIZATION RATE OF COMMUNITY-OWNED PALM OIL PLANTATIONS: A CASE STUDY IN BATU BARA REGENCY, NORTH SUMATERA PROVINCE, INDONESIA

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Abstract

The capitalization rate is an important study in converting the estimated income into the value of a property and measuring the rate of return on investment in the property sector. The objective of this research is to determine the rate of capitalization of community oil palm plantations in Batu Bara Regency and the factors that are considered to have an effect either partially or simultaneously. The most suitable model of various models to estimate the rate of land capitalization of community-owned oil palm plantations in Batu Bara Regency, North Sumatera

Province, is in the form of a log-line, namely: Capitalization Rate = 0.032 + 0.003 Plantation Area + 0.005 Productivity + 0.0002 Distance to Palm Oil Factory + 0.006 Proof of Ownership + 0.015 Seed Quality. Simultaneously shows that land area, productivity, distance to the palm oil factory, proof of ownership, and seed quality have a significant effect on the rate of capitalization. Partially shows that land area, productivity, distance to a palm oil factory, and quality of seeds have a significant effect, while proof of ownership no significantly affect the capitalization rate of community-owned plantations in Batu Bara Regency, North Sumatera Province, with the acquisition of an adjusted R2 (coefficient of determination) by 85.9%. Based on the results of the study, it can be concluded that the higher the rate of capitalization, the higher the risk level of the property.
Keywords: Capitalization Rate, Plantation Land, Community, Palm Oil, Batu Bara Regency

INTRODUCTION

Palm oil (Elaeis guineensis Jacq) is one of the plantation commodities that has an important role in the Indonesian economy. As the largest foreign exchange-producing commodity, its contribution to the national economy is relatively large and broad, ranging from employment, improving people's welfare, regional development, technology transfer, and investment inflows to its contribution as one of the mainstay forces in receiving regional and central government revenues (Ministry of Industry of the Republic of Indonesia, 2021).

Palm oil itself has the status of the world's highest-producing vegetable oil plant. It can produce more oil per hectare of plantation land than other vegetable oils. Therefore, the palm oil industry is a leading industry that deserves to be developed more widely, from upstream to downstream. The high coating layer makes palm oil suitable for various purposes, including cooking oil, industrial oil, and biofuel.

Since 2006, Indonesia has become the world's largest palm oil producer, which is important in supplying and meeting the global demand for vegetable oil. The global demand for palm oil continues to increase despite the conditions of a negative campaign (black campaign) against palm oil products or CPO (Crude Palm Oil) and its derivative products. From the supply side, the availability of land, labor, and cultivation technology is also very supportive. Indonesia has much land to grow the palm oil derivative in the processing industry and add more value to the palm oil industry in terms of market demand and supply. (Ministry of Industry of the Republic of Indonesia, 2021).

From 2016 to 2021, it is predicted that palm oil output will continue to expand significantly. According to data from the Directorate General of Plantations—Ministry of

Agriculture, palm oil output reached around 48.4 million tons in 2019. Private-owned plantations are the greatest producers, producing 30.1 million tons, or 62 percent of Indonesia's total palm oil output. The remaining 34%, or up to 16.2 million tons, is generated by the community's plantations, while the remaining 4%, or up to 2.1 million tons, is produced by state-owned plantations. (Sixth Edition of the Book of Palm Oil Industry Performance Analysis).

About 48.4 million tons of palm oil will be produced in 2021 from a planted area of 15.1 million ha, of which about 55.8% is the area of private-owned plantations, about 40.3% is the area of community-owned plantations, and about 579,600 hectares is the area of state-owned plantations. Prospects for the palm oil industry and its derivatives are promising in both the local and international markets. This industry is growing more crucial since it has the potential to become the driver of national economic growth, generate foreign currency, and absorb workers. (Sixth Edition of the Book of Palm Oil Industry Performance Analysis).

The palm oil industry's expansion has reached all regions in North Sumatera Province, including the Batu Bara Regency. Batu Bara Regency is one of North Sumatera's plantation centers. Rubber, oil palm, coconut, cocoa, and areca nuts are important commodities produced by plantations in Batu Bara Regency. In each subdistrict of Batu Bara Regency, palm oil plantations are grown. In 2021, 180,525 tons of FFB (Fresh Fruit Bunches) palm oil will be produced over a total area of 12,176 ha.

In addition, investors who will invest in palm oil plantations must have a concept concerning the capitalization rate, which may serve as a reference. This capitalization rate may provide a basic and straightforward reference for community farmers in the Batubara area to calculate the value of palm oil plants per hectare. The development of a methodology to evaluate the value of land capitalization of palm oil plantations will aid in the valuation of land in Batu Bara Regency.

Research Questions

In light of the previous context, the authors present presumptions in the form of the following questions:

1. What is the average capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province?
2. Does the land area have an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency?
3. Does productivity have an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency?

4. Does the distance to the palm oil factory have an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency?
5. Does the proof of ownership have an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency?
6. Does seed quality have an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency?

Research Objectives

The research objectives are as follows:

1. To determine the average capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province.
2. To determine the effect of land area on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.
3. To determine the effect of productivity on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.
4. To determine the effect of distance to the palm oil factory on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.
5. To determine the effect of ownership proof on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.
6. To determine the effect of seed quality on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.

The empirical findings in this study are expected to contribute to the advancement of the body of knowledge. They will become an alternative to the main references for academicians and practitioners.

LITERATURE REVIEW

Capitalization Rate

The capitalization rate is the ratio of the net income produced by a property to the market value. If the property's market value and capitalization rate are identified, the property's fair selling or leasing price may be established. Therefore, the property capitalization rate will greatly assist when deciding on property investments, such as in residential and stores, plantations, and agricultural sectors, which are the most frequently transacted property types. In terms of palm oil plantations, for instance, they continue to provide profitable investment prospects. This income might be generated by sales or from the others. When making

investment decisions, it is crucial to consider both the return and the risk associated with the investment.

In the practice of property valuation using an income approach, the capitalization rate is utilized to transform the income generated by a property into market value. Direct capitalization and yield capitalization are commonly used to determine the degree of capitalization—the distinction between the two lies in their underlying assumptions. Direct capitalization presumes that the income received in subsequent years will be identical to the income in the valuation year. In the meantime, yield capitalization contains assumptions on factors such as the expected rate of return by investors, the remaining economic life, the term of ownership, and the anticipation of depreciation or appreciation.

According to Cherry and Dick (2004), a property valuation approach based on a capitalization rate should be used for properties with a relatively stable annual income since it is difficult to apply this capitalization rate to properties with an unstable income. Nonetheless, this approach has some benefits. First, it provides investors with useful information regarding the rate of return they can expect from investing in the property. Second, it is simple and easy to understand and apply; third, it demonstrates reliable income; and fourth, it can be applied broadly.

The simplest method to determine the capitalization rate, as detailed in "The Appraisal of Real Estate, 14th Edition," is the ratio between net operating income (NOI) demonstrated in net income and market value (MV), which is formulated as follows:

$$\mathbf{R} = \frac{\mathbf{Net\ Operating\ Income\ (NOI)}}{\mathbf{Market\ Value\ (MV)}}$$

Where,

Ro = Capitalization rate of palm oil plantations in Batu Bara Regency

NOI = Net operating income annually of palm oil plantations in Batu Bara Regency

MV = Market value or fair selling price of palm oil plantations in Batu Bara Regency

To calculate NOI, one must first determine the expected annual gross income from operating the property, which includes rental income and service charges, assuming there is no vacancy rate. Secondly, the effective gross income is determined by reducing the potential gross income by the vacancy rate, uncollectible income, and other income received from the potential gross income. Then, a sufficient income will be earned. NOI is calculated by subtracting the operating costs from the property's effective income for an annual (IAAO, 1996). Figure 1 represents the NOI Determination Stage.

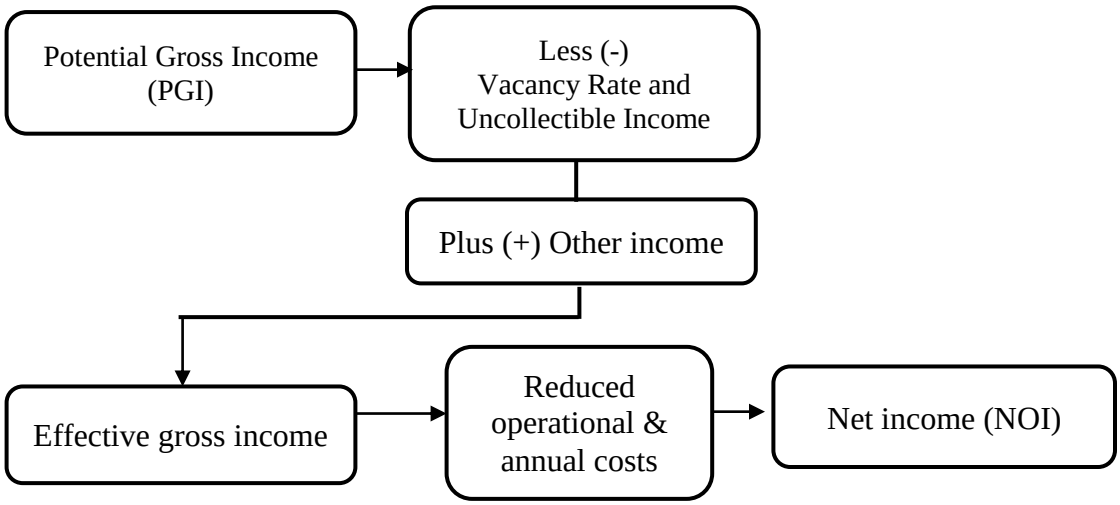

Figure 1: NOI Determination Stage

Moreover, the overall capitalization rate analysis results on some community-owned palm oil plantations will become the research sample. The next step is a statistical analysis to determine the average and standard deviation. In addition to statistical tests to estimate the average value from the capitalization rate of community-owned palm oil plantations in Batu Bara Regency, an analysis of the capitalization rate and predetermined factors is also undertaken.

The market value of agricultural land

According to MAPPI (2018), "market value" is defined in SPI 101-3.1 as an estimate of the amount of money that can be obtained from the exchange of an asset or liability on the date of valuation between a buyer who wants to buy and a seller who wants to sell, in a bond-free transaction in which the marketing is carried out properly and both parties act based on their understanding, prudence, and without coercion.

The actual value of agricultural land reflects the value-in-use of land as agricultural land rather than market value. Therefore, land cultivators intend to optimize the usage of agricultural land. The value of agricultural land use is comparable to the income-based valuation approach, which may be estimated by capitalizing on the net income received by farmers or the marginal value product of the output from agricultural land use or rental revenue. Capitalization theory requires a certain capitalization rate to turn the revenue stream into property value. Higher productivity will have the ability to produce a higher rental value so that the capitalization rate will also be higher (Fathullah, 2004).

Palm Oil Plantation

According to Law No. 18 of 2004 regarding plantations, the definition of plantations includes all activities that cultivate certain plants on land and/or other growing media in a suitable ecosystem, manage and market the products and services of the plants with the help of science and technology, capitalization, and management to create well-being for plantation entrepreneurs and the community. A palm oil plantation is land in a unit of land that is cultivated in a certain area with the commodity of palm oil plants that are cultivated, equipped with non-plant assets of palm oil plantation and other supporting facilities, and managed with generally applicable to palm oil plantations management standards. (Ministry Finance of the Republic of Indonesia, 2012).

As the leading commodity of the plantation subsector, palm oil plantations play a strategic role in both national and international economic development, as well as in the provision of employment, economic growth, foreign exchange sources, poverty alleviation, and environmental conservation (Ministry of Industry of the Republic of Indonesia, 2021). Variety is a key impediment to attempts to enhance palm oil productivity in order to accelerate its expansion. Varieties are individual plants with characteristics that can be preserved after several progeny testing procedures. Each variety has a distinguishing feature that sets it apart from the others. The variations are in terms of the anatomy, physiology, and morphology of the plant, which might impact the plant's growth and yield (Mangoendidjojo, 2003).

There are two cultivated varieties of palm oil: Elaeis guineensis and Elaeis oliefera. These two kinds are commonly cultivated. Each variety offers unique advantages. Elaeis guineensis is highly productive, even though the tree trunk is rather tall, making harvesting difficult. However, Elaeis oilefera has a low tree and a lower yield. Some scientists are crossing these two kinds to generate lower trees with high production yields.

There are three varieties of palm oil in Indonesia. First, variants are distinguished by the shell and flesh thickness and oil content. Based on their characteristics, these are split into three groups: The Pisifera palm oil variety has an extremely thin shell, thick flesh, only a fiber-coated core, and low oil yield. The Tenera palm oil variety has a thin shell, extremely thin flesh, and produces small fruit bunches but has a high oil content yield of 22–24 percent. Varieties determined by skin color: palm oil offers a variety of kinds, such as Nigrescen (blackish purple or blackish orange ripe fruit), Virescen (green/blackish orange-black masked fruit) and Albescens (white/yellowish ripe fruit with a yellow tip). Superior types are those that palm oil cultivators extensively plant in order to provide high-quality, satisfying outcomes. Crossing Dura and Pisifera produced superior palm oil seeds, with the Dura variety as the female parent and the Pisifera variety as the male parent (PPKS, 2017).

The productivity age of palm oil plants

According to Risza (2009), the age of the plant is a major factor in determining the production of palm oil plants. The greater the difference in age composition between young and mature plants, the lower the production per hectare. This plant's age composition varies yearly, impacting the annual production per hectare. The productivity of FFB generated will continue to improve with age until the plant reaches its maximum production between 9 and 14 years of age, which will begin to decline. Typically, palm oil plants will generate optimum amounts of FFB between the ages of 25 and 26 years. The age of the plant is thus the greatest factor influencing FFB variations generated by palm oil plants. At the age of two years, palm oil plants develop fruit bunches and undergo a production pruning process, which includes eliminating certain leaves in preparation for harvesting (Yudistina et al., 2017).

Following the findings of Tampubolon's (2016) study, FFB productivity continued to increase until the optimal age of 12 years, after which there was a slight decline in productivity, necessitating that farmers administer additional treatments to plants such as fertilizers to prevent the decline in productivity. The composition of the age of palm oil plants varies from year to year, which impacts the annual yield per hectare.

Factors that affect the productivity of palm oil plants

According to Sunarko (2009), the production potential of palm oil plants is determined by the type, productivity, and yield of palm oil. Maintenance factors, such as annual rainfall, pest and disease interference, harvesting, and transport activities, are also determined. Pahan (2010) argued that plants could meet all agronomic and physiological assumptions, meaning that they can adapt to the environment where they grow and get a sufficient supply of nutrients and water without pests and disease interference. One of the limiting factors in palm oil production relates to sunlight radiation.

Factors that affect the capitalization rate of plantation land

Land area

A plantation is any activity that cultivates certain plants on soil or another growth medium in a suitable ecosystem; processes; and markets the plant products with the aid of science and technology, capital, and management to produce welfare for plantation business actors and the community. Plantation land is a cultivation medium or source of plantation commodity production that provides farmers with a source of income. The land area is measured in hectares and represents the area of palm oil plantations (Ha).

Productivity

Productivity refers to land, labor, capital (livestock, money), or other inputs (cash, energy, water, and nutrients). Most individuals evaluate agricultural production based on overall biomass, the yield of specific components (grain, straw, protein content), or profit. Farmers have a method for defining and characterizing production, for instance, with the unit of labor needed during planting or weeding or with the unit of irrigation water used. Yield per hectare will measure how productive a piece of land is. Kilograms or tons will be used as standard units.

Distance to Palm Oil Factory

The distance relates to the length of a moving object's route from its initial point to its ultimate place. The economic value of the property will increase if it is situated closer to the downtown or the commercial district. On the other hand, since, in principle, the property is more strategically valuable the closer it is to the central business district and the more accessible it is infrastructure and utilities are, the value and price of land will reduce as the site nears the city outskirts. Although land quality capabilities increase with distance from the city center, all relative conveniences will decrease as the place is outside the city (Sutawijaya, 2004).

Proof of Ownership

The kind of ownership refers to the type of ownership letter held by palm oil farmers. In such instances, an asset with a certificate of ownership will have a higher value than one that does not yet. It is because a certificate of ownership represents the land's highest right to control.

Seed quality

The quality of the seeds and the treatment provided to the plants will affect the farm's yield. Better seed quality will result in increased revenue for farmers. Ironically, many individuals continue to utilize poor-quality seeds, resulting in outcomes that fall short of expectations. Kariyasa (2015) showed that smallholder palm oil plantations that used certified seeds produced 66.34 percent more than those that did not. They also had a higher net present value (NPV) of 79.45 percent, an IRR of 31.8 percent, and an ROI of 55.1 percent.

Relationship between research variables

The effect of land area on the capitalization rate of palm oil plantations

Nawawi (2005) analyzed the land capitalization rate of coffee plantations in the South Lampung Regency and found that land area significantly influenced the land capitalization rate

of coffee plantations, with a real capacity of 83.06%. Likewise, Widiyatmoko (2007) research analyzed the capitalization rate of tobacco farming land through the estimation of the basic rent value of land in Temanggung Regency and found that land area significantly influenced land rent value with a real capacity of 80.34%. The larger the plantation area, the more influential the capitalization rate.

The effect of productivity on the capitalization rate of palm oil plantations

Asmara & Nurholifah (2010) analyzed the income and factors that influence the income of sugarcane farmers in membership of a cooperative and found that productivity affects farmers' income. The higher the productivity, the higher the farmer's income. Similarly, Alitawan & Sutrisna (2017) found that productivity positively affected the income of citrus farmers in the Bangli Regency. So, productivity affects the capitalization rate and, in theory, directly affects net operating income (NOI).

The effect of the distance between plantations and factories on the capitalization rate of palm oil plantations

Subechan (2008) analyzed the capitalization rate of sugarcane farming land based on the estimated rental value of land in the North Lampung Regency. The author found that factors like the land size, the distance to the sugar factory, and the width of the road to the farmland all significantly affected the capitalization rate, with a real capacity of 86.39%.

The effect of the ownership proof on the capitalization rate of palm oil plantations

Taslim's research (2014) analyzes the relationship between value and land area, distance from the toll gate, road width, land proof, and land legality to the land value around the Haji Anif toll gate. The researcher found that land area had no significant effect on land value. The distance to the toll gate has a significant and negative effect on land value. The width of the road significantly affects the value of the land. The sshape of the land has a significant effect on the value of the land. Land legality has a significant effect on land value. Land legality, such as a certificate of ownership, is the highest right in Indonesia. The certificate of ownership is the best proof of land ownership. The price of land with a certificate of ownership has a higher value than other rights.

The effect of seed quality on the capitalization rate of palm oil plantations

I Ketut Kariyasa (2015) analyzed the financial feasibility of using certified palm oil seeds in the province of West Kalimantan and found that smallholder palm oil plantations that had

used certified seeds were able to produce 66.34% more than seeds that were not certified and provided NPV, IRR, and higher ROI. In theory, the income approach means that the results are feasible to work on if the NPV, IRR, and ROI values are positive. If the community's palm oil plantation business uses superior seeds, they will get higher yields.

Hypotheses

H1: Land area has an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.

H2: Productivity has an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.

H3: The distance to the palm oil factory has an effect on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency.

H4: The proof of ownership has an effect on the capitalization rate index of community-owned palm oil plantations in the Batu Bara Regency.

H5: Seed quality has an effect on the capitalization rate index of community-owned palm oil plantations in the Batu Bara Regency.

RESEARCH METHODS

This study is classified as quantitative research (Sinulingga, 2016). The authors used the survey approach to gather facts from existing symptoms and sought factual information about the problems in this study by collecting quantitative data. Surveys and face-to-face interviews with sellers and farmers; data from relevant government agencies The study was conducted in Batu Bara Regency. This regency was chosen given that it is one of the centers for palm oil plantation commodities in North Sumatera Province. This study ran from September through November of 2021.

Population and Sample

The population of this research is the community's palm oil plantations located in Batu Bara Regency. Research sampling uses purposive sampling with attention to population characteristics (Arikunto, 2010). The criteria used as a sample are (1) palm oil plantation land where a sale and purchase transaction occurred; and (2) plantation land with palm oil trees as the main plants. Population data obtained in the field obtained as many as 53 data points. Because the total population is less than 100 data points, the total sample is taken as a whole (Arikunto, 2012).

Data Collection

Primary data collection is undertaken through surveys and interviews on the following factors: capitalization of the value of palm oil plantations in Batu Bara Regency, covering the area of land; productivity; distance to palm oil factories; proof of ownership; and seed quality. The secondary research data came from the Head or Village Office, the Office of the Agricultural Service, and the Land and Building Tax Service Office in Batu Bara Regency, North Sumatera Province.

Operationalization of Variables

The operational definition of the variables to be studied in this study will be described as follows: The capitalization rate is the ratio between the net income generated from a palm oil plantation property and the value of the palm oil plantation property (market value or fair market selling price of the plantation). The land area is the area of plantation land planted with palm oil, expressed in hectares (Ha). Productivity is the number of fresh fruit bunches produced based on the area that can be harvested. It is measured in tons per hectare (Tons). The distance from the plantation to the factory is the distance traveled from the palm oil plantation to the factory where fresh fruit bunches (FFB) are processed and produced. It is expressed in kilometers (Km). The proof of ownership is the type of letter ownership owned by farmers, which is expressed in nominal form. A dummy variable used for proof of ownership that already has a certificate of ownership is given a value of 1, while the proof of ownership that is still a Village Deed is given a value of 0.

Data Analysis

Descriptive and inferential statistics are used in data analysis. Descriptive statistical analysis determines a dataset's description based on the maximum, minimum, average (mean), and standard deviation. In this study, inferential analysis is divided into the classic assumption test and the goodness of fit test.

Classical assumption test

In this study, the classical assumption test is to develop a decent regression model capable of giving an accurate and unbiased estimate in line with the Best Linear Unbiased Estimator (BLUE) criterion (Gujarati, 2006). The normality, heteroskedasticity, and multicollinearity tests are among the classical assumption tests used in this study. The normality test employs one-sided testing on a single data point, i.e., if the result is significant or the probability is greater than 0.05, the data is normally distributed (Ghozali, 2006). The Variance

Inflation Factor (VIF) number indicates the collinearity statistic to test for multicollinearity. The independent variable does not have a multicollinearity problem if the VIF number is lower than ten and the tolerance value is higher than 0.1. (Santoso, 2002). The Glejser Method was used in this study to test for heteroskedasticity. All independent variables are regressed against the absolute value of the residual in this method. If a variable's significance value (Sig) is greater than 0.05, the regression model does not show any signs of heteroscedasticity (Suliyanto, 2011).

The goodness of Fit Test

The goodness of fit tests the researchers will do are the F test, the t-test, and the coefficient of determination test (R^2). The coefficient of determination test (R^2) is used to measure how well the model can explain the variation of the dependent variable. The adjusted R Square value is in the interval $0 \leq R^2 \leq 1$ (Ghozali, 2006). The F-test is used to test the simultaneous influence of the independent variable on the dependent variable. If there is an influence, the regression equation model enters the fit criteria. (Suliyanto, 2011). Sig value is less than 0.05, or F-count exceeds F-table. There is a simultaneous influence of variable X on variable Y. The F-table value of this research is 2.41. The t-test to prove that the independent variable affects the dependent variable by comparing the calculated value with the t-table value (Suliyanto, 2011), criteria for decision-making: significance value (Sig) less than 0.05 or t-count greater than the t-table. There is an influence of the independent variable on the dependent variable. The t-table value of the research is 2.011, and the significance level is 5% = 0.05.

RESULTS

Descriptive Statistics

Table 1: Descriptive Statistics

	N	Min	Max	mean	Std. Deviation
Land area (hectares)	53	1.00	5.00	3.0755	1.12402
Productivity (tons/ha)	53	10.00	17.00	13.2264	2.42298
Distance to palm oil factory (km)	53	2.50	35.00	23.8000	10.13110
Proof of ownership	53	.00	1.00	.5660	.50036
Seed quality	53	.00	100	.5849	.49745
Capitalization rate (R)	53	.09	.16	.1270	.02241
Valid N (listwise)	53				

Table 1 presents information on the number of observation data, as many as 53 data thus, the research analysis outcomes are as follows:

1. The land area has a minimum value of 1 ha, a maximum of 5 ha, and an average value (mean) of 3.0755, with a standard deviation of 1.12402.
2. Productivity has a minimum value of 10 tons/ha, a maximum of 17 tons/ha, and an average value (mean) of 13.2264, with a standard deviation of 2.42298.
3. The distance to the factory has a minimum value of 2.5 km, a maximum of 35 km, and an average value (mean) of 23.8 km, with a standard deviation of 10.13110.
4. Proof of ownership has a minimum value of 0, a maximum of 1, and an average value (mean) of 0.5660 with a standard deviation of 0.50036.
5. Seed quality has a minimum value of 0, a maximum of 1, and an average value (mean) of 0.5849 with a standard deviation of 0.49745.
6. The capitalization rate has a minimum value of 9%, a maximum of 16%, and an average value (mean) of 12.70%, with a standard deviation of 0.02241.

Classical Assumption Test Results

Normality test

The objective of the normality test is to determine if the residual value has been standardized in the normally distributed regression model. Kolmogorov-Smirnov test was used to determine if the data used in this investigation were normal.

Table 2: Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		53
Normal Parameters a,b	Mean	.0000000
	Std. Deviation	.00800444
Most Extreme Differences	Absolute	.069
	Positive	.069
	Negative	-.055
Test Statistics		.069
Asymp. Sig. (2-tailed)		.200c,d
a. Test distribution is Normal.		

Since it is known that the probability value or Asymp. Sig (2-tailed) of 0.200 is above the significance level of 0.05, and the data distribution is normal (see Table 2)

Multicollinearity Test

A multicollinearity test was run to see if the two independent variables exhibited a nearly perfect linear correlation. There will be a multicollinearity concern if there is a correlation between independent variables.

Table 3: Multicollinearity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.032	.013		2,359	.023		
Land area (Ha)	.003	.001	.129	2.453	.018	.981	1.020
Productivity	.005	.001	.583	4.236	.000	.143	6,992
Distance to POF (Km)	.000	.000	.111	2,091	.042	.959	1.043
Proof of Ownership	.003	.003	.065	1.032	.308	.691	1.448
Seed quality	.015	.005	.326	2,515	.015	.161	6.183
a. Dependent Variable: Capitalization Rate							

Table 3 shows that the Variance Inflation Factor (VIF) value for all independent variables is smaller than 10, and the tolerance value for all independent variables is greater than 0.1. The existing independent variables do not have multicollinearity problems.

Heteroscedasticity Test

The heteroskedasticity test identifies the existence or absence of non-identical variable variations in the regression model. The Glejser Method is one of the heteroskedasticity tests used in this investigation. This approach involves regressing each independent variable against the absolute value of the residual.

.Table 4: Heteroscedasticity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.001	.006		.169	.867
Land area (Ha)	.000	.000	-.117	-1,000	.322
Productivity	.000	.001	.056	.182	.856
Distance to POF (Km)	.000	.000	.225	1,898	.064
Proof of Ownership	.001	.001	.095	.678	.501
Seed quality	.004	.003	.463	1,601	.116
a. Dependent Variable: Abs_RES					

Table 4 demonstrates the probability value or Sig. Glejser, for all independent variables, is larger than 0.05, indicating the regression model lacks heteroskedasticity.

Hypothesis Testing Results

Coefficient of Determination (R^2)

Table 5: Coefficient of Determination test results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934a	.872	.859	.00842
a. Predictors: (Constant), Seed Quality, Land Area (Ha), Distance to POF, Proof of Ownership, Productivity (Ton/Ha)				
b. Dependent Variable: Capitalization Rate (R)				

The value of the coefficient of determination R^2 is reported to be 0.859. This number indicates that all independent variables can explain the dependent variable by 85.9 percent, with the remaining 14.1 percent being impacted by factors beyond the scope of this research.

Simultaneous test results

Table 6: F-test results

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.023	5	.005	64,286	.000b
	Residual	.003	47	.000		
	Total	.026	52			
a. Predictors: (Constant), Seed Quality, Land Area (Ha), Distance to POF, Proof of Ownership, Productivity (Ton/Ha)						
b. Dependent Variable: Capitalization Rate (R)						

Table 6 demonstrates that Sig = 0.00 is less than 0.05, while F-count = 64,268 is more than F-table = 2.39. It may be inferred that all independent variables significantly influence the dependent variable simultaneously.

Partial test results

Table 7: The t-test results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.032	.013		2,359	.023
Land area (Ha)	.003	.001	.129	2.453	.018
Productivity	.005	.001	.583	4.236	.000
Distance to POF (Km)	.0002	.000	.111	2,091	.042
Proof of Ownership	.003	.003	.065	1.032	.308
Seed quality	.015	.005	.326	2,515	.015
a. Dependent Variable: Capitalization Rate					

Multiple linear regression equation:

Y = 0.032 + 0.003 (X1) + 0.005 (X2) + 0.0002 (X3) + 0.003 (D1) + 0.015 (D2)

Table 7 shows the following; the results of the hypothesis test partially show that the land area has a positive and significant effect on the capitalization rate (the t-count value of 2453 is greater than the t-table value of 2.011, and the probability value is 0.018, which is smaller than the alpha value of 5%). Thus, the hypothesis is accepted.

The hypothesis test results partially show that productivity has a positive and significant effect on the capitalization rate (the t-count value of 4.236 is greater than the t-table value of 2.011, and the probability value is 0.000, which is smaller than the alpha value of 5%). Thus, the hypothesis is accepted.

The results of the hypothesis test partially show that the distance to the palm oil factory has a positive and significant effect on the capitalization rate (the t-count value of 2.091 is greater than the t-table of 2.011, and the probability value is 0.042, which is smaller than the alpha of 5%). Thus, the hypothesis is accepted.

The hypothesis test results partially show that the proof of ownership does not have a significant effect on the capitalization rate. The t-count value of 1.032 is greater than the t-table of 2.011, and the probability value is 0.308, which is higher than the alpha of 5%. Thus, the hypothesis is rejected.

The hypothesis test results partially show that seed quality has a positive and significant effect on the capitalization rate (the t-count value of 2.514 is greater than the t-table of 2.011, and the probability value is 0.049, which is lower than the alpha of 5%). Thus, the hypothesis is accepted.

DISCUSSION

The effect of land area on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency

The study found that land area had a positive and significant effect on the land capitalization rate for palm oil plantations in Batu Bara Regency. This finding corroborates previous research (see Isfrizal & Rahman, 2018), which found that farmers' incomes will increase as land area increases. The farmer's income will be lower if the land area is small. It implies a one-way or positive relationship between land area and farmers' income. It is in line with Irfan Riadi (2016), which found that the area of paddy fields had a positive and significant effect on the capitalization rate of paddy fields. Likewise, the research of Widiyatmoko (2007) shows that land area significantly affects the value of land rent in the Brebes Regency.

The effect of productivity on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency

The research results found that productivity has a positive and significant effect on the capitalization rate of palm oil plantations in the Batu Bara Regency. Similarly, the research of Asmara & Nurholifah (2010) proved that productivity has an effect on farmers' income. The more productivity increases, the more the farmer's income will increase. This finding supports previous research by Alitawan & Sutrisna (2017), who found that productivity positively affects income. It is in line with the empirical findings of Khristiana, Yenni, and Catur Sugiyanto (2006), who found that productivity significantly influences the rental value of land in the Brebes Regency. Their research also found that the average capitalization rate of agricultural land value in Brebes Regency is 1.70%, with a standard deviation of 0.67%. The lowest capitalization rate is 0.47%, and the highest is 3.03%. Productive land will be more beneficial and will increase the farmer's NOI.

The effect of distance to palm oil factory on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency

The research found that the distance to the palm oil factory has an effect on the capitalization rate index of community-owned palm oil plantations in the Batu Bara Regency. The empirical finding supports the prior study by Irfan Riadi (2016), who stated that the distance between rice fields and business centers shows a positive relationship with the capitalization rate of agricultural land. The further the paddy fields are from the business center, in this case, rice mills, the greater the risk that will appear. However, this finding is different from previous

research. Subechan (2008) found that the distance to the sugar factory significantly influences the capitalization rate of sugarcane agricultural land based on the land rental value. Fisher and Martin (1994) noted that properties far from the business center would have a higher risk, particularly space market risk. This space market risk is influenced by the property's location, resulting in changes in market rents, vacancy rates, and NOI. The location of properties far from the business center will lower the market rent and the NOI, while the property value will also decrease further. In the end, the risk to the owner becomes high. The higher the risk, the higher the capitalization rate.

The effect of proof of ownership on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency

The research results found that proof of ownership does not have significantly affect the capitalization rate of community-owned palm oil plantations in the Batu Bara Regency. This result is contrary to the research of Taslim (2014), who found a positive relationship between the level of land legality and land prices. The higher the level of legality on the land, the higher the price of the land. The certificate of ownership is the highest proof of ownership of property in Indonesia, giving a higher land value than those with a lower level of proof of ownership. A high land value will get a lower capitalization rate because other factors shape the rate of capitalization, such as the net income generated from the plantation.

The effect of seed quality on the capitalization rate index of community-owned palm oil plantations in Batu Bara Regency

The research results demonstrate that the quality of seeds has a positive and significant effect on the capitalization rate of community-owned palm oil plantations in the Batu Bara Regency. The empirical findings corroborate the results of Kariyasa (2015), which show that certified palm oil seeds can produce higher productivity than non-certified seeds. For example, the productivity is 66.34% (see 22.2 tons of FFB/ha/year versus 13.3 tons of FFB/ha/year). NPV is 79.45% higher (see NPVBS = IDR 125 million versus NPVNS = IDR 69.6 million). IRR is around 31.84% higher (see IRRBS = 25.94% versus IRRBNS = 19.67%).

CONCLUSION

The research concludes that: (1) the minimum capitalization rate of community-owned palm oil land in Batu Bara Regency, North Sumatera Province is 8%, the maximum is 17%, and the average value is 12.72%. The higher the net income (NOI), the more the land capitalization

rate will increase. (2) Land area has a significant effect on the index of the capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province. Therefore the hypothesis is accepted. (3) Productivity has a significant effect on the index of the capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province. Thus the hypothesis is accepted. (4) The distance to the palm oil factory has a significant effect on the index of the capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province. Thus the hypothesis is rejected. (5) Proof of ownership does not have a significant effect on the index of the capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province. Therefore the hypothesis is rejected. (6) Seed quality has a significant effect on the index of the capitalization rate of community-owned palm oil plantations in Batu Bara Regency, North Sumatera Province. Thus the hypothesis is accepted.

SUGGESTIONS

This study includes the following recommendations: Given the limited land supply, the policy of enhancing palm oil productivity is a primary concern for the local government, particularly in Batu Bara Regency. In order to increase productivity, landowners are encouraged to utilize certified seeds when replacing their old, unprofitable palm oil plants. In addition, it simultaneously encourages farmers to use productivity inputs effectively. It is due to certified seeds being highly sensitive to optimally productive inputs. Improving the road infrastructure leading to smallholder plantations will make it easier for farmers to transport their produce to palm oil factories. It makes it easier for the community to upgrade land certificates to property rights certificates. Certificates of ownership are more advantageous to the community in terms of higher land values and make it simpler for the community to guarantee the letter to get operating capital from the bank. It is suggested that academicians enhance this research, particularly for warehouse property research objects, by examining additional factors beyond the scope of this study so that it may serve as a reference for other researchers doing similar case studies. It is suggested that future studies use the dependent variable, such as the capitalization rate (R), for stores, hotels, and warehouses. This is undertaken such that comprehensive capitalization rate (R) data is accessible for all property types, particularly those in Batu Bara Regency, North Sumatera Province. Last, this study related to property appraisal practical, hence further studies can expand this framework to advancement the practical and scholarly of property appraisal knowledge.

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