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Influence Factor Social and Economy to Productivity Oil Palm Plantation Self-Reliance in Subdistrict Mersam Regency Batanghari-Indonesia

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ABSTRACT

This study aims to: analyze the influence of social and economic factors on the productivity of Self-Help Palm Oil in Mersam District. The analysis method in the study used the Partial Least Square (PLS) approach with 62 respondents. The results of the study showed 1) Oil palm farming is carried out conventionally. The average area of oil palm land is 3.4065 ha per farmer. The number of oil palm trees depends on the planting pattern. Spraying and fertilization are carried out twice a year. The average age of oil palm is 4 - 21 years. Farming activities are carried out by family and non-family labor. The process harvesting done 2 time in a month. 2) Factor social in the form of age in research area that is 32 – 72 year. Flat- flat amount liability family farmer is 0 – 6 people, the majority of farmers' ethnic groups are Javanese, Batak and Malay, the motivation of farmers is in the high category and the level of cosmopolitanism of farmers is good. In the economic factor in the form of access to marketing where farmers sell their production to middlemen, loading, and factories, oil palm farmers sell TBS at a price of Rp. 1900 - 2,100, the largest capital which are issued is Rp. 160,377,000 and distance travel around 15.4 – 20.4 km. 3) Social factors have a direct positive effect on productivity. Social factors influential negative to productivity through variable moderation use of production inputs. Economic factors have a direct positive and significant effect on productivity. Economic factors have a positive and significant effect on productivity through the moderating variable of use of production inputs.

KEYWORDS

factor social; factor economics; input allocation productivity

INTRODUCTION

Palm oil is a commodity that is currently the primadona of plantations in Indonesia. For years, palm oil has played an important role in the Indonesian economy and is one of the mainstay commodities producing foreign exchange. Coconut palm oil provides contribution Which Enough big to foreign exchange, its role tends to increase from year to year. First, palm oil is material main oil fry, so that supply follow guard stability cooking oil prices. Cooking oil is one of the nine basic necessities of society so its price must be affordable for all levels of society. Second, as one of the mainstay agricultural commodities of non-oil and gas exports, the commodity This own the prospect that Good as source acquisition foreign exchange and also tax. Third, in the production and processing process it is also able to create job opportunities and at the same time improve the welfare of the community.

Palm oil productivity in Mersam District is relatively high considering the large area of farmers' land compared to other Districts in Batanghari Regency. Of course, This will affect

the production of farmers who cultivate oil palm in Mersam District. Many studies have stated that high and low productivity is caused by social factors. and farmer economy. Social factors and economy is factor determinant Which influence the occurrence high or low productivity, this occurs because social and economic factors can influence attitude farmer in optimize productivity farming coconut palm oil that owned (Nainggolan, S, et al, 2021). Roger (2003) explain that factor the social and economic characteristics of farmers are the number of family dependents, the farmer's background, age, access to sales, prices and labor which are related to productivity in a determinant manner and explain a person's position in society in relation to other people. other in meaning environment socializing, his achievements, And rights as well as its obligations in relation to resources.

Table 1. Wide Area, Production and Productivity Plantation Coconut Palm Oil Pattern Self-reliance Per Regency/City in Province Jambi Year 2022

Region	Wide Area (ha)	Production (ton)	Productivity (ton/ha)
Batanghari	**217.215**	**508,653**	**2.34**
Muaro Jambi	224,461	393,737	1.75
Bungo	130,762	299,431	2.28
Tebo	98,062	216,802	2.21
Merangin	130,708	211,177	1.61
Sarolangun	92.953	214,931	2.31
Tanjung Jabung Timur	134,378	248,600	1.85
Tanjung Jabung Barat	70,568	108,776	1.54
Kerinci	84	14	0.16
Kota Jambi	-	-	-
Kota Sungai Penuh	-	-	-

Source: Service Plantation Province Jambi

Table 1 shows the development of the area of oil palm plantations in Jambi Province in the Regency ara in 2022. One of the highest oil palm productions in Jambi Province is in Batanghari Regency. The community that stays in Regency Batanghari part big the farmer depends on oil palm farming. The area of oil palm plantations in Batanghari Regency in 2022 reached 217,215 ha with a production level of 508,653 tons and productivity of 2.34 tons/ha. Farmers in Batanghari Regency have the potential for production Which tall compared to with a number of Regency other. Development The area and productivity of oil palm plantations in Batanghari Regency cannot be separated from the quality of the plants and all social and economic factors used in each oil palm plantation. Therefore, this study was conducted to determine the social and economic factors that influence oil palm production in Mersam District, Batanghari Regency. Factors that influence oil palm productivity in Mersam District, Batanghari Regency. Social factors from six manifest factors, namely Farmer Age (UM), Number of Family Dependents (JTK), Farmer Ethnicity (EP), Farmer Motivation (MP), and Cosmopolitan Level (TK). Economic factors consist of four factors manifest that is Access to Marketing (ATP), Price (HG), Capital (MD), And Distance Traveled (JT). Input consists of three manifest factors, namely Access to Fertilizer Procurement (APP), Fertilizer Price (HGP), and Amount of Chemical Fertilizer Use (JPPK). Latent variables of self-help pattern productivity consist of three factors, namely Land Area (LL), Production (PRD) and Plant Age (UT).

RESEARCH METHODS

The subjects of the study were farmers who cultivate oil palm. The study will be conducted from December 2023 to January 2024. The study was conducted by taking one sub-district as a sample with the focus of the study being 3 out of 18 village among them Village Sengki Mudo, Sengki New and Village Simp. Region Gedang. Research This implemented in Subdistrict Mersam Regency Batanghari done intentionally (purposively) with the consideration that this area has the potential to develop independent oil palm farming businesses with large land areas and production Which big. Amount farmer palm oil Subdistrict Mersam is 1,741 person farmers. The selection of village samples was done intentionally (purposive) using the formula from taro yamane or slovin (Riduan, 2009) obtained a total of 62 sample farmers. The data processing operations used were Microsoft Excel and smart PLS software, namely by going through the stages of use, including (Jaya and Sutemjaya, 2008):

1. First Step: Designing a Structural Model (inner model)
2. Step Second: Designing Model Measurement (outer model)
3. Step Third: Constructing diagram Track
4. Step Fourth: Conversion diagram Track to in System Equality.

RESULTS AND DISCUSSION

Description Farming Coconut Palm oil in Subdistrict Mersam Regency Batanghari

Subdistrict Mersam is Wrong One Subdistrict center production coconut palm oil in Regency Batanghari. Subdistrict Mersam located on between 0º S up to 5º LU And 100º BT until 105º BT with height 25 m s/d 100 m on sea level. Mersam District is bordered by the following areas: North - bordering Tanjung Jabung Barat Regency, South - bordering Batin XXIV District, East - bordering Muara Tembesi District, West - bordering Maro Sebo Ulu District. The villages that are the research areas are Sengakati Mudo Village, Sengkati Baru Village, and Simpang Rantau Gedang Village. Currently, most of the oil palm plants are 4-21 years old. Oil palm cultivation activities in the research area are plant maintenance in the form of fertilization, weed control, and harvesting activities.

Factor Social and Economy Which Influence Productivity Coconut Palm oil Pattern Self-reliance of Mersam District, Batanghari Regency.

Factor Social

Age Farmer

Age is one of the factors that affect productivity in farming. Age determines a person in determining the work performance/performance of the person where the higher the age of the farmer or person, the ability to accept new technology in carrying out farming activities will decrease. The age of the respondent farmers in the research area varies from the youngest, which is 32 years old and the oldest is 72 years old. The average age of the respondent farmers is in the age group 47-51 year.

Amount Liability Family

Amount member family is power Work from in family, it is hoped that the more family members there are, the more workers will participate. in activity farming. Amount member family Which meant in research This is the amount member family Which is at in House ladder farmers consisting of father, mother, and children who are the dependents of the head of the family. Respondents' dependents in the research area range from 0-6 family members.

Ethnicity farmer

The ethnicity of farmers is one of the similarities in origin, which can influence the productivity of farmers. farmer coconut palm oil. The majority of ethnic farmers Respondent originate from Malay ethnic group, Java and Batak. Ethnicity farmer This will influence ability think farmers so that must adapt self with environment Which new with people who have different social, economic and cultural backgrounds.

Motivation Farmer

Work motivation is the basic drive that drives someone to work. This impulse is within a person who moves him to do something in accordance with encouragement Which There is in himself. Motivation Which There is on self farmers will realize a behavior in demand Which directed on objective Which reach satisfaction target. Soekartawi (2011) state that farmers Which elder appear to be less inclined to engage in agricultural innovation than those who are relatively younger.

Level Cosmopolitan

The cosmopolitan level that owned by farmers in coconut farming Palm oil can indirectly affect the productivity of oil palm farming in Mersam District, Batanghari Regency. Farmers who have a high level of cosmopolitanism will have a higher level of technology application, the more often respondents in look for information Which related with activity farming, so that more and more Lots knowledge farmer in farming so farmer will capably use inputs production Which influence productivity coconut palm oil in Mersam District, Batanghari Regency.

Factor Economy

Access To Marketing

Access to marketing of palm oil in the research area. In Mersam District Regency Batanghari, usually farmer sell results production to middleman There are also farmers who sell to loading (RAM), and there are also farmers who produce in large quantities, usually these farmers sell to factory. Access to marketing Also is Wrong One factor which affects productivity, where each place has different selling prices.

Price

Price is one of the factors that plays an important role in farming activities. Where if the price is high, farmers will tend to optimize their farming business. The price of TBS in the research area varies, but on average farmer in area research get price range Rp.1,900 – Rp. 2.100 as many as 25 people or around 40%.

Capital

Capital is Wrong One condition For run farming, capital used for buy means production like give wages power Work, buy tool, and needs other. Capital can originate from loan or from farmer That Alone. Farmers' capital in oil palm farming in the research area varies, but on average farmers in the research area provide capital ranging from Rp. 0 - Rp. 25,000,000. In this case, on average respondents spend capital with varying costs in running their oil palm farming. The capital spent by respondents is in accordance with the respondent's financial capabilities so that it can affect oil palm productivity.

Distance Travel

Distance is one of the factors that play a role in farming activities, where if the distance from the house to the plantation is far and bad, it will make it difficult for farmers to carry out

their farming activities. The distance from the farmer's house to the oil palm plantation they own varies greatly. The distance in the research area is approximately 15.4 - 20.4 km. This means that if the distance is close or far, it will affect the productivity of oil palm farming.

Analysis of the Influence of Social and Economic Factors Affecting the Productivity of Oil Palm Farming Businesses.

Test Compatibility Model Measurement (Outer Model)

The results of the analysis show that age is the strongest indicator in reflecting social factor variables because it has the largest outer loading, namely 0.880. Access to marketing is the strongest indicator in reflecting economic factor variables because it has the largest outer loading, namely 0.876. The amount of chemical fertilizer is the strongest indicator in reflecting the variable of production input usage with a value of outer loading is 0.963. Production own mark outer loading most strong in reflect variable productivity that is 0.914. Matter This in line with Kassim, M. A., et al. (2023) where is the quantity variable chemical fertilizers and production has the strongest outer loading value.

Test Compatibility Model Measurement (Outer Model)

Inner model testing is carried out to see the influence between latent variables and dependent variables. latent other. variable Use Input Production (PIP) own mark R2 of 0.803 results This show that variable use input production (PIP) influenced together on social and economic factors, namely 80.3%, which means that the model is categorized as good. The variable Productivity of Self-Help Palm Oil Farming (PKPS) has an R2 value of 0.835. This result shows that the variable productivity of oil palm farming (PKPS) can influenced simultaneously by social factors, economic factors, and the use of production inputs by 83.5%, which means that the model is categorized as good. The R-squared result (R2) of ≥ 0.67 identifies that the model is categorized as good. The R-squared result between 0.33 and 0.67 R-squared result (R2) identifies that the model is categorized as moderate. While the R-squared result (R2) below 0.33 identifies that the model is categorized as weak (Chin, 1998 in Ghozali, 2014).

Influence Direct

The direct influence is seen from the results of the path coefficient test where the direct influence is the influence of the relationship between factor variables and economic factor variables on the variable of use of production factors, the influence of social factor variables and economic factor variables on the variable of productivity of oil palm farming businesses.

Table 2. Analysis Track Connection between Variables Latent

Connection between Variables	Coeffici ent Track	*Flat-average sample*	*Standard Deviation*	t-Statistick	*P Value*	Description n
Factor social → Input usage Production	- 0.071	- 0.102	0.217	0.328	0.743	Negative and not significant
Factor social → Productivity	0.221	0.226	0.147	1,504	0.133	Positive but Not Significant
Factor economy → Use of produc-tion inputs	0.962	0.998	0.204	4,720	0,000	Positive and very Significant

Factor economy → Productivity	0.101	0.107	0.206	0.493	0.622	Positive but Not Significant
Use production input → Productivity	0.628	0.619	0.152	4,145	0,000	Positive and very Significant

In the table it can be seen that Social Factors (FS) have a direct negative and insignificant influence on the use of production inputs (PIP) and have a positive influence but No significant to productivity farming coconut palm oil pattern self-reliance (PKPS). It can be interpreted that directly every strengthening of the social factor variable is 10 % so will weaken variable use input production as big as 0.71% and strengthens the productivity variable by 2.21%.

In economic factors, it has a direct positive and significant influence on the use of production inputs, and a positive and insignificant influence on farm productivity. It can be interpreted that each there was a strengthening of economic factors of 10% so will happen strengthening use input production as big as 9.62%, and strengthens the productivity variable by 1.01%. The use of production inputs directly has a positive and significant effect on farm productivity. It can be interpreted that every time there is a strengthening of the use of production inputs by 10%, there will be strengthening productivity farming as big as 6.28%. Matter This in line with study Ifgayani (2019) Where variable fertilizer as input production Which affect the production of paddy fields.

Influence No Direct

Mark influences No direct variable factor social and economy on farm productivity can be seen in the following table:

Table 3. Influence No Direct Variables Factor Social and Economy to Variables Productivity Farming Coconut Palm oil Pattern Self-reliance

Relationship between Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics	P-Value
FS → PIP → PRDV	- 0.045	- ,062	0.133	0.336	0.737
FE → PIP → PRDV	0.604	0.616	0.189	3,188	0,000

The size the coefficient of elasticity of social factor variables indirectly on farm productivity through production input usage variables is -0.045, It means every the occurrence strengthening factor internal as big as 10% so will there is strengthening variable productivity farming as big as -0.45%. The size coefficient elasticity of external factor variables indirectly on farm productivity through the moderation variable of production input usage variable is 0.604, meaning that every 10% strengthening of economic factors will strengthen the farm productivity variable by 6.04%. This is in line with the research of Iska Malinda (2021) which states that the results of the analysis of factors that have a total coefficient of indirect influence of economic factor variables on farm productivity variables have a positive and significant effect.

Conversion Diagram Path to Equality

Conversion diagram path in Inner form and outer model to express influence quality between various construct. Diagram track indicator Influence Factor Social and economic factors that influence the productivity of self-help oil palm farming in Mersam District which are produced by bootstrapping can be seen in the following figure:

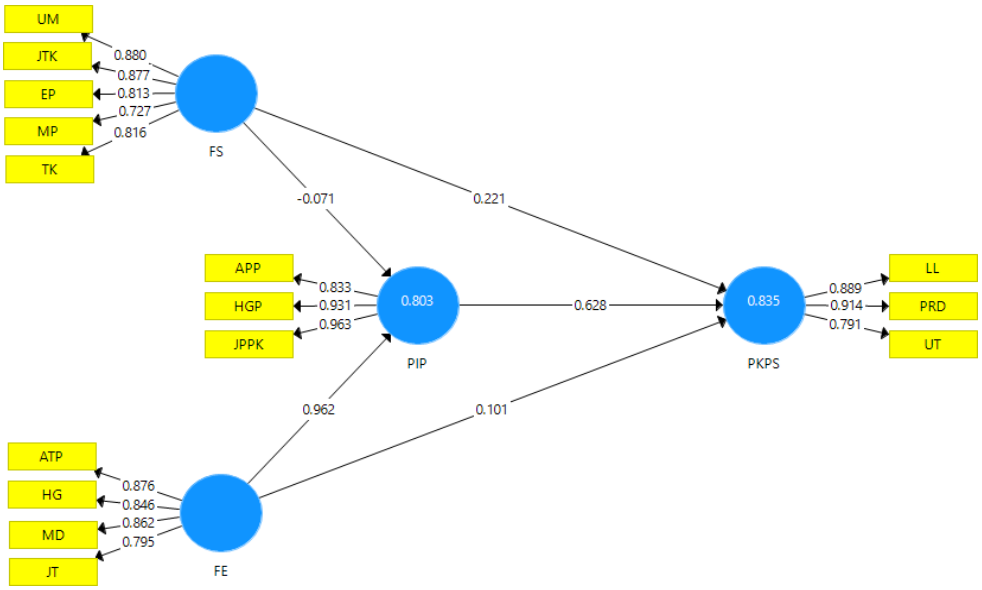

Figure 1. Diagram Track Indicator Variables Factor Social and Economy on the Productivity of Independent Palm Oil Farming Patterns

Analysis Influence Indicator on Variables Latent

Latent variables in This research consists of 4 variables namely variable factor social, economic factors, use of production inputs, and farm productivity. Each variable has several indicators that are able to explain the latent variable. The variable is said to be influential If mark t count > t table or seen from P-value Which bigger than the value of α = 5%, then the variable is said to have a significant influence.

Table 5. Influence Indicator on Variables Latent

	Original Sample (O)	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*T-Statistics (O/STDE)*	*P-Value*
UM ← FS	0.880	0.876	0.039	22,363	0,000
JTK ← FS	0.877	0.872	0.038	23.161	0,000
EP ← FS	0.813	0.809	0.056	14,546	0,000
MP ← FS	0.727	0.73	0.066	11,066	0,000
Kindergarten ← FS	0.816	0.816	0.049	16,631	0,000
ATP ← FE	0.876	0.868	0.050	17,461	0,000
HG ← FE	0.846	0.840	0.057	14,852	0,000
MD ← FE	0.862	0.868	0.022	40,044	0,000
JT ← FE	0.795	0.798	0.082	9,688	0,000
APP ← PIP	0.833	0.827	0.064	13,086	0,000
HGP ← PIP	0.931	0.931	0.022	43.123	0,000
JPPK ← PIP	0.963	0.964	0.007	137,660	0,000
LL← PKPS	0.889	0.889	0.026	33,830	0,000
PRD ← PKPS	0.914	0.913	0.023	39,961	0,000
UT ← PKPS	0.791	0.787	0.081	9,810	0,000

Source: Results Processed Data Smart PLS Version 3.0, 2024

On table can seen influence manifest to variable its latent. Mark p-value = 0,000 < α = 0.005 It means influential very real/ significant . First age, number of family dependents,

farmer ethnicity, farmer motivation, and comopolitan level together as variable manifest Which capable explain factor social. Where the coefficient of each of the manifest social factors of age is 0.880, the coefficient amount liability family as big as 0.877, coefficient ethnicity farmer as big as 0.813, farmer motivation coefficient of 0.727, cosmopolitan level coefficient of 0.816. This means that every time there is a manifest strengthening of the social factor variables (age, number of family dependents, farmer ethnicity, farmer motivation and cosmopolitan level) by 10%, it will consecutively strengthen the social factor variables by 8.80%; 8.77%; 8.13%; 7.27% and 8.16%.

Second, access to marketing, price, capital And distance travel in a way together as manifest variables that are able to explain economic factor variables. Where the coefficient of each of the economic factor manifests is access to marketing of 0.876, price of 0.846, capital of 0.862 and distance traveled as big as 0, 795. It means every happen strengthening variable manifest access regarding marketing, price, capital and distance traveled as much as 10% then there will be a strengthening of the economic factor variables by 8.76%, 8.46%, 8.62% and 7.95%.

Third, access to fertilizer procurement, fertilizer prices, and the number of chemical fertilizers together as variable manifest Which capable explain variable use of production inputs. Where the magnitude of the coefficient of each of the manifest use of production inputs access to fertilizer procurement is 0.833, the price of fertilizer is 0.931 and the amount of chemical fertilizer is 0.963. This means that every time there is a strengthening of the manifest variable of access procurement fertilizer, price fertilizer, and amount fertilizer chemistry as much as 10% so there will be a strengthening of the production input usage variables by 8.33%, 9.31%, and 9.63%.

Fourth, land area, production and plant age together as manifest variables that are able to explain the variable of oil palm productivity. Where the coefficient of land area is 0.889, production is 0.914 and plant age is 0.791. This means that every time there is a strengthening of the manifest of land area, production and plant age as much as 10% so will happen strengthening variable productivity coconut palm oil by 8.89%, 9147% and 7.91%.

CONCLUSION

Oil palm farming in the research area is carried out conventionally. On average wide land coconut palm oil 3,4065 hectares per farmer. Amount tree coconut palm oil 110-135 per hectares depends pattern plant it. Spraying And fertilization done 2 or 3 times a year. Fertilization is done 1-3 times a year where farmers provide 1-2 kg of fertilizer per stem. The average age of oil palm plants is 4-21 years. Activity farming done with use power Work family and outside the family. The harvesting process is carried out twice a month.

Social factors in the form of age where the age range in the research area is 32-72 years. The average number of dependents of farmer families is 0-6 people, the ethnicity of farmers in the research area is mostly Javanese, Batak and Malay, the motivation of farmers in the research area is quite high and the level of cosmopolitanism of farmers in the research village is quite good, plus farmers who join their farmer groups. In the economic factor in the form of access to marketing where farmers in the research area sell their production to Middlemen, loading (RAM), and Factories, the price of palm oil in the research area varies, but on average farmers choose a price of Rp. 1900-2,100, the largest capital spent in carrying out palm oil farming in this research area is Rp. 160,377,000 with amount Respondent 1 person and distance travel in the research areas are quite diverse.

Social factors have a direct positive but insignificant effect on productivity. Social factors have a negative and insignificant effect on productivity through the moderating variable of production input use. Economic factors directly direct influential positive and very

significant to productivity. Economic factors have an influence positive and very significant to productivity through the moderating variable of production input use.

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