

# Analysis of the Factors That Affect the Income of Oil Palm Farmers in Tanjung Medan District, Rokan Hilir Riau Regency

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## ABSTRACT

This study was conducted to determine the factors that influence the income of oil palm farmers in Tanjung Medan District, Rokan Hilir Regency, with production as an intervening variable. Oil palm farmers' income is the dependent variable, while labor, land area, working capital and price are independent variables. The population in this study is the Tanjung Medan District community which consists of 6 villages, with a population of 4,574 people. The sample in this study amounted to 110. The types of data used in this study were primary and secondary data. The method used in this research is path analysis. Path analysis is the development of multiple regression analysis which describes the magnitude of the influence of the independent variables on the dependent variable indirectly. using SPSS AMOS 22. The results in this study indicate that labor, working capital and prices have a positive and significant effect on production, but labor has no effect on production. labor, working capital have a positive and significant effect on income, while land area and price have no effect on income. The results of the path analysis show that there is an indirect relationship between labor, working capital, and selling prices on income through production. while the area of land does not indirectly have a significant effect on income through production.

**Keywords:** Labor, Land Area, Working Capital, Selling Price, Production, Income.

## INTRODUCTION

Indonesia as an agrarian country is known for the majority of its population living in agriculture. People in pedesan and the outskirts of the city who live farming, generally have houses, food courtyards in the form of rice fields and gardens planted with fruit, rubber, palm and others. This kind of culture has been going on for generations since the Stone Age, the time of colonization to this day. But it is unfortunate in fact that most of these agrarian societies have not been able to live well or their income is still low from their agricultural output. The greater the contribution of the agricultural sector to its GDP means that the country still belongs to agrarian, but when the contribution of the agricultural sector to its GDP percentage is small then the country can be called an industrial state.

The agricultural sector has a fairly important role in Indonesia's economic activities, this can be seen from its contribution to gross domestic product (GDP) which is quite large at around 12.72 percent in 2019 or is the third order after the industrial sector of large and eceran (19.70 percent), as well as the reparation of cars and motorcycles (13.01 percent). One of the sub sectors with considerable potential is the plantation sub sector (palm oil Statistics Indonesia Palm oil Statistics, 2019).

Sub-sector plantations in its long history have a vital role in the improvement of the national economy both economically, ecologically and socially culturally. It is proven that from year to year always contribute in increasing the scale of GDP, high value of domestic and foreign capital investment/cultivation, contribute surplus international trade balance, national devisa resources, contribute in increasing the country's acceptance through tobacco tax, export tax and Customs, export collection of palm oil products and its derivatives, provision of food and industrial raw materials, labor absorbers, plant, decrease in greenhouse gas emissions and support the preservation of the SDA and the environment in accordance with the mandate of the Plantation Law No. 39/2014 (General Directorate Of Plantation Ministry Of Agriculture Of The Republic Of Indonesia, 2019).

In the context of Indonesian development, agriculture is classified into one of the sectors within the scope of the economic field (TAP MPR no. II/MPR / 1983 outline of the national direction). Thus, the agricultural sector as one of the sectors of the economy does not escape the activities of how people choose and use the limited production resources (land, energy, capital goods) to make various commodities (goods) and then distribute to members of the community to meet the needs of its commsums.

According to Yanto Santosa (2017), agricultural contribution is still one of the biggest contributions in Indonesian economy especially in producing devisa country. Oil palm is one of the agricultural commodities that has an important role because: 1) palm oil is the main raw material of cooking oil so that the continuous supply will maintain the price stability of the cooking oil. This is important because cooking oil is one of the 9 basic ingredients needed by the community so the price must be affordable by all walks of life. 2) as one of the mainstay agricultural commodities of non migas export, this

commodity has good prospects as a source of revenue devisa and taxes. 3) in the production and processing process is also able to create opportunities work and at the same time improve the well-being of society.

Indonesia's workforce is an agricultural sector. This Sector holds 43.97 percent. The agricultural sector is 43.97 percent more labor intensive. Thus the agricultural sector has a very important role in the economy of employment inindonesia (BPS Indor Indonesia 2006). Along with the increase in the world's population, the need for vegetable food, vegetable oil, raw materials manufacturing industry, food flavoring materials will increase as well as competition between producers commodity plantations. Indonesia's exports have fluctuated in both volume and price. In 2019 there was a considerable anomaly where export volume increased sharply but devisa's turnover decreased sharply especially when compared to 2017. Where in the last 2 years of 2018 and 2019 there has been a significant reduction in prices for almost all product lines especially export plantations such as rubber and CPO, coconut and others (General Directorate of Plantations Ministry of Agriculture of the Republic of Indonesia, 2019).

**Table 1 Extensive Development Of Areal And Production Of Coconut Plantations Palm Oil Indonesia, 2015-2019**

Year	Production (Million Tons)	Areal area (million Ha)
2015	31,07	11,26
2016	31,49	11,20
2017	34,94	12,38
2018	42,88	14,33
2019	48,42	14,60

Source: Indonesian Palm Oil Statistics, 2019

The table above shows that in 2015, the area of oil palm plantations amounted to 11.26 million Ha with the achievement of production 31.07 million tons, in 2016 the area of oil palm plantations decreased to 11.20 million Ha with production increased by 31.49 million tons, in 2017 the area of oil palm plantations became 12.38 with the achievement of production 34.94 million tons, in 2018 the area of oil ton, then in 2019 the area of oil palm plantations

became 14.60 million Ha with a production achievement of 48.42 million tons.

Oil palm plantations are spread across 26 provinces, namely all provinces on the islands of Sumatra and Kalimantan, West Java, Banten, Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sulawesi, Gorontalo, Maluku, North Maluku, Papua and West Papua. Of the 26 provinces, Riau province is the province with the largest oil palm plantation area in Indonesia, which is 2.71 million Ha in 2018 or 18.89 percent of the total area of oil palm plantations in Indonesia. In 2019, the area of oil palm plantations in Riau province is expected to increase to 2.82 million Ha (Indonesia oil palm plantation Statistics, 2019).

Based on the provisions of Article 150 paragraph (2) of Law No. 32 of 2004 on regional government as amended by Law No. 12 of 2008, the regional Medium Term Development Plan (RPJMD) of Rokan Hilir regency in 2016-2021 has determined that the purpose of development planning is in addition to achieving national development goals, Regional Development also aims to improve the results of regional development for the community fairly and evenly so that the community is more prosperous.

Based on data obtained in 2018, there are seven districts in Riau that have the largest oil palm planting area, namely Kampar (430 thousand hectares), Rokan Hulu (410 thousand hectares), Siak (347 thousand hectares), Pelalawan (325 thousand hectares), Rokan Hilir (282 thousand hectares), Indragiri Hilir (227 thousand hectares), and Bengkalis (186 thousand hectares) (Riau in 2019 & rpjmd district).

Rokan Hilir regency is one of the districts in Riau province. More than 50

percent of the economy of Rokan Hilir comes from the agricultural sector, so that economic development is focused on the agricultural sector in order to encourage and sustain the industrial sector and the trade sector as well as other sectors. The development of the agricultural sector is directed to increase food production, namely rice, crops and horticulture. Plantations have an important position in the development of Agriculture both at the national and regional levels, especially potential trade crops, namely oil palm, rubber and coconut. Increasing plantation production with intensification, extensification and rehabilitation of plantation crops (Statistics Rokan Hilir, 2010).

People who work as farmers in Rokan Hilir regency, especially in Tanjung Medan District, generally have oil palm plantations per head of household (KK) this smallholder community usually has an average of one to two hectares but there are also those who have more land area than that. Oil palm production that can be produced from the area of this oil palm plantation can usually reach tons but the price is always unstable or fluctuating and not only that sometimes the palm oil is also experiencing a period of track or does not produce the amount of harvest as usual. The area of this district is 984.90 Km<sup>2</sup> (Rokan Hilir in figures 2010).

Based on data (Riau Community Welfare statistics, 2018) Indragiri Hulu, Bengkalis, Pelalawan, Rokan Hulu, Kampar and Rokan Hilir regencies, were named as districts with low welfare. People spend more than 50% of their spending on food. Only Siak regency can be considered prosperous because spending on food is only 49.75%. Indicates an income or high-income household/ family.

**Table 2 Oil Palm Productivity Results Of Rokan Hilir Regency 2015-2019**

Description	Unit	Year				
		2015	2016	2017	2018	2019
Area	Ha	289.876,00	274.502,00	306.398,00	234.281,00	234.280,80
Production	Ton	864.883,00	804.392,00	816.699,00	622.986,00	622.985,60
Productivity	Kg/Ha	3.000,00	2.930,00	2.665,00	2.659,00	2.659,14

*Source: Ministry Of Agriculture Of The Republic Of Indonesia, 2015-2019*

From Table 2 data shows that the production of oil palm in Rokan Hilir regency has decreased every year except in 2017. The decline in the amount of production is because in 2015-2019 the number of oil palm crops is always fluctuating or uncertain so that the level of production also fluctuates, this will also make the income of oil palm farmers uncertain.

Tanjung Medan sub-district is the second largest oil palm producer in Rokan Hilir regency, while the palm oil production is 59 505.19 tons. While the production of the first palm oil, namely Bangko Pusako District, amounted to 60 308.27 tons (Rokan Hilir regency, 2018). The reason the researchers chose the research location in the District of Tanjung Medan is because the welfare of the community is lower even though it has produced a lot of palm oil. Such as the number of families of nonpln electricity users is equal to 3. 404 families and it is also known from this data that the main source of income of villagers / kelurahan in Tanjung Medan District is from agricultural products (Tanjung Medan district, 2018) while in Bangko Pusako district the number of families of nonpln electricity users is 1. 761 families and it is known from this data that the main income of the villagers/kelurahan in Bangko Pusako District apart from agriculture there are also villages whose main source of income is from the field of services. So, it is known that not all villages in Bangko Pusako district whose main income is from agriculture. (Bangko Pusako District, 2018). Tanjung Medan district is a district located in Rokan Hilir regency, Riau. Tanjung Medan sub-district is one of the districts in Rokan Hilir regency, Riau which has a high potential of plantation land especially for oil palm, most of the population has a livelihood as a good oil palm farmer who cooperates with his own palm oil plantation. Based on the land area by land type and District (Ha), 2017 that Tanjung Medan district has an area of 984, 90Km2 and the area of oil palm plantations Tanjung Medan

District 20 055.00 Ha (Rokan Hilir regency in 2014).

**Table 3 pricing of fresh fruit bunches (FFB) in provinces Riau No. 37 period 16 to 22 September 2020**

Age (Years)	Price (Rupiah)	Unit
3	1.508,64	Kg
4	1.635,09	Kg
5	1.788,02	Kg
6	1.831,12	Kg
7	1.902,57	Kg
8	1.955,23	Kg
9	2.001,50	Kg
10-20	2.048,64	Kg
21	1.961,06	Kg
22	1.951,14	Kg
23	1.942,88	Kg
24	1.860,26	Kg
25	1.814,82	Kg

Source: Riau Province Plantation Office, 2020

But at the level of farmers the price of fresh fruit bunches (FFB) is only around Rp 1,700-1,800, oil palm prices are always fluctuating resulting in farmers ' income is always changing and uncertain, then sometimes oil palm fruit also experienced a period of track where the fruit in the harvest is reduced from the usual harvest. A common problem faced by the community is the low productivity and quality of production. One of the causes of low productivity of oil palm is because the production technology applied is still relatively simple, ranging from the seedling stage to the harvest stage. By applying the right cultivation technology will have the potential to increase oil palm production. Based on observations, the cause of this problem is the scarcity of information related to farming in the community in everyday life, in addition to other causes is the price of oil palm that always fluctuates resulting in farmers ' income is always changing and uncertain, then sometimes oil palm fruit also experienced a period of track where the fruit in the harvest is reduced from the usual harvest.

The economic life of smallholder oil palm farmers is in an uncertain position because their income must be determined by the state of global market prices. Fluctuations in the price of oil palm fruit cause Riau oil palm farmers are in a dilemma to meet the needs of their families. Until now the price of fresh fruit bunches

(FFB) Riau Palm always fluctuates. Hasl is due to the trade of Crude Palm Oil (CPO) in the global market resulting from oil price competition.

According to Ken Suratiah (2011), there are several factors that are suspected to affect the income of farmers are: first internal factors and external factors. Internal factors include the amount of labor, land area and capital. External factors are input (availability, price) and output (demand, price). Second, the management factor is that farmers as managers must be able to make decisions with various economic considerations so that results are obtained that provide maximum income. In its implementation, various information about the combination of production factors and price information, both production and product prices are needed. According to Ken Suratiah (2015), Labor is one of the determining elements, especially farming that depends on the season. Scarcity of labor resulted in the retreat of planting time so that it has an effect on plant growth, productivity and product quality. In economics, labor is an instrument of physical strength and the human brain, which cannot be separated from Man and is aimed at the effort of production.

According to Suparyanto in Augustine Hartopo (2019), income is the amount received by members of the community for a certain period of time in return for the factors of production that they contribute in participating in forming the national product. In general, farmers' income which contains as a residual or object of the reduction of the value of farm receipts with the costs incurred and from this income can then be expressed the amount of remuneration for the use of Labor, own capital and agricultural processing expertise. According to Soekartawi in Subandriyo (2012), farm income is the difference between revenue and all costs or in other words farm income includes gross income or total revenue and net income. Gross income or total revenue is the value of the production of agricultural

commodities as a whole before deducting the cost of production.

According to Ken Suratiah (2011), the amount of energy in the family will have a direct effect on costs. The more use of family labor, the less cost incurred to hire labor outside the family. Then farmers who have a narrow land with family labor available, can complete the work without using outside labor hired. Thus, the cost per farm becomes lower. Then the available capital is directly related to the role of farmers as managers and farmers in managing their business, the type of commodity to be cultivated. Similarly, how much the level of use of production factors depends on the available capital, farmers as managers can not provide funds then forced the use of production factors are not in accordance with the provisions that should be. As a result, productivity is low and income is also low.

Basically the goal of farmers is to optimize income. The next problem that farmers have is the level of capital ownership, which may cause the income of some farmers is still low. Capital in farming can be associated with start-up capital and working capital/ production capital. Capital is an absolute requirement for the continuation of a business, as well as farming. According to Vink in Ken Suratiah (2011), including land that can bring income is considered as capital. In the economic sense of a company, Capital is an economic good that can be used to reproduce or capital is an economic good that can be used to maintain or increase income. Working capital has a positive and significant effect on the household income of horticultural farmers (Nyoman Diatmika, 2016).

Land area is viewed from the point of efficiency, the more land area cultivated, the higher the production and income per unit area (Ken Suratiah, 2015). This is in line with the results of research by Lambertus Langga, et al (2021) stating that Labor, selling price and land area significantly affect the income of salt

farmers. The amount of Labor negatively and significantly affects the household income of horticultural farmers (Nyoman Diatmika, 2016). These external factors occur outside the control of farmers. Variables that can be put into this category include the input price that is normalized and institutional. This variable has a negative expectation sign or will affect farm income negatively. This means that the higher the value of input prices that are normalized, the income of farmers will decrease (Nur Zaman, et al, 2020). Then the results of research Isfrizal and Bobby Rahman (2018), also said that together the land area, capital and labor significantly affect the income of farmers.

## **LITERATURE REVIEW**

### **Agricultural Development**

Agricultural development is an integral part of economic development and economic development is an integral part of national development. Agricultural development is building physical Agriculture (Irrigation, printing rice fields) the goal is not to build the building, but the human being who is fair, prosperous and Equitable Life. At first the national development strategy was thought of for the idea of industrialization. Industry is considered a symbol of development progress, the key to prosperity, the motor of economic development and overcoming the narrowing employment opportunities in the agricultural sector.

### **Agricultural Development Policy**

The word *tanggung* agriculture has recently become very popular, both among governments, experts, and in the wider community, it is expected to be a change from an agrarian society to an industrial society. In this change is not impossible if there are various vulnerabilities, so that it is in need of steady thinking so that the economic structure is balanced and dynamic. To define a resilient farm is not an easy thing. Resilient agriculture is a dynamic and resilient agriculture that

optimally utilizes natural resources, labor, capital, and existing technology and is able to increase farmers' income.

### **Palm Oil And Rural Development In Indonesia**

The presence of oil palm plantations in rural areas has had an economic impact, among others, stimulating the growth of other sectors in rural areas. Riau Province, North Sumatra, South Sumatra, Central Kalimantan, and Jambi is the center of oil palm development that contributes 68 percent of CPO production nationally or 64 percent of the total area in Indonesia. The increase in CPO production in the central area of palm oil development will have an impact of about 40 percent on other non-agricultural sectors such as financing institutions, trade, restaurants, hotels, transportation, infrastructure and other sectors (Amzul in Yanto Santosa, et al, 2017).

### **Production**

Production in the basic economic sense is an activity that produces output in the form of goods and services, by changing the factors of production from no/less benefit/use to have more benefit value. The factors of production that are generally used are labor, land and capital.

### **Income Analysis Approach**

According to KBBI income means the results of work (business and so on), search, discovery (about something that did not exist before), and opinion, while farm income is defined as the difference between revenue and cost. According to Gustiyana in Nur Zaman, et al (2020) income is categorized into two, namely gross income and net income.

### **Price**

According to the Indonesian dictionary price is the value of an item that is determined or amounted to money. Price is the amount of money a person has to pay to get a product. Determining the price also

requires an understanding of the role of symbols that can only play for the product and the target market being worked on.

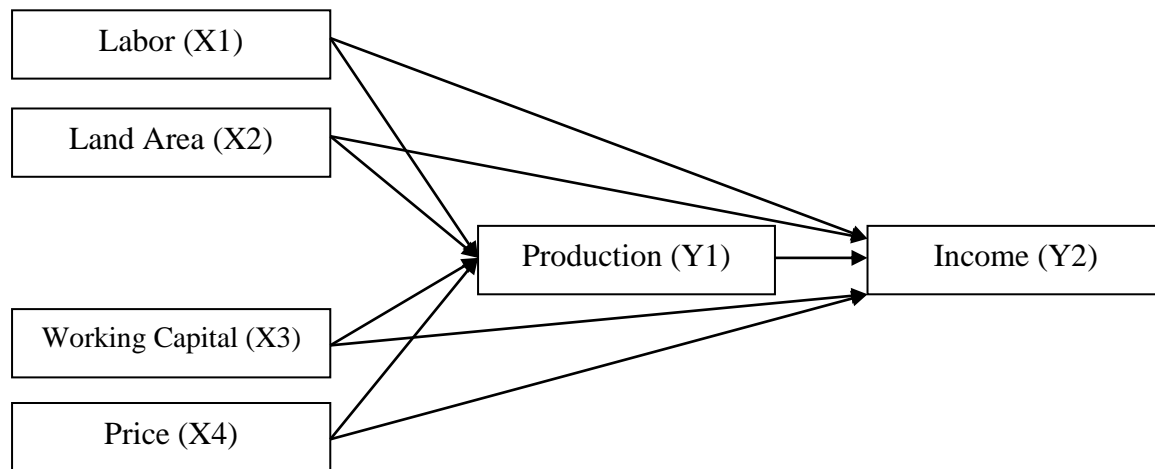


Figure 1. Conceptual Framework

### Hypothesis

Based on the background of research and the relationship between variables, the research hypothesis:

1. There is a positive influence of Labor on the amount of production of oil palm farmers in Tanjung Medan District.
2. There is a positive influence of land area on the amount of production of oil palm farmers in Tanjung Medan District.
3. There is a positive influence of working capital on the amount of production of oil palm farmers in Tanjung Medan District.
4. There is a positive influence of price on the amount of production of oil palm farmers in Tanjung Medan District.
5. There is a positive and significant influence of Labor on the income of oil palm farmers in Tanjung Medan District.
6. There is a positive and significant influence of land area on the income of oil palm farmers in Tanjung Medan District.
7. There is a positive and significant influence of working capital on the income of oil palm farmers in Tanjung Medan District.
8. There is a positive and significant influence on the income of oil palm farmers in Tanjung Medan District.

9. The indirect influence of Labor variables, land area, working capital, and price on the income of oil palm farmers in Tanjung Medan District through production.

### MATERIAL AND METHOD

This research is located in Tanjung Medan subdistrict which consists of 6 (six) villages, namely: Tanjung Medan Village, Tangga Batu Village, Sri Kayangan Village, Tanjung Sari village, Tanjung Medan Barat Village and Tanjung Medan Utara Village are included in Rokan Hilir regency, Riau. The timing of this study began in September 2020. The basis for the consideration of determining the location is the selection of the five villages because the average community works as farmers or in other words the source of income of the average community from plantations. Then choose the area of this location also because in this location there are research problems that will be examined, namely the uncertainty of income received by farmers at harvest time, whether it is due to labor problems, insufficient capital and land area and prices are always changing.

Population and sample research, according to Sugiyono in Suryani and Hendryadi (2015), population is a generalization area consisting of objects/subjects that have certain qualities

and characteristics that have been determined by researchers to be studied and then drawn conclusions. Thus, it can be stated that a population is a group of people, events, or objects that have certain characteristics and are made objects of research. The population in this study is oil palm farmers who have their own land spread in 6 villages of Tanjung Medan District. The details of the number of oil palm farmers in 6 villages of Tanjung Medan District. So that the number of samples taken in this study as many as 98 respondents. However, based on the requirements of the number of data / respondents that can be processed with AMOS must be above 100 respondents, the researchers completed the number of respondents to 110 to facilitate this study.

The types of data in this study are primary data and secondary data. Where primary data is obtained directly from the source through the questionnaire method, interview method and observation method to the field of oil palm farmers in Tanjung Medan District, Rokan Hilir regency, Riau. Meanwhile, secondary data was obtained

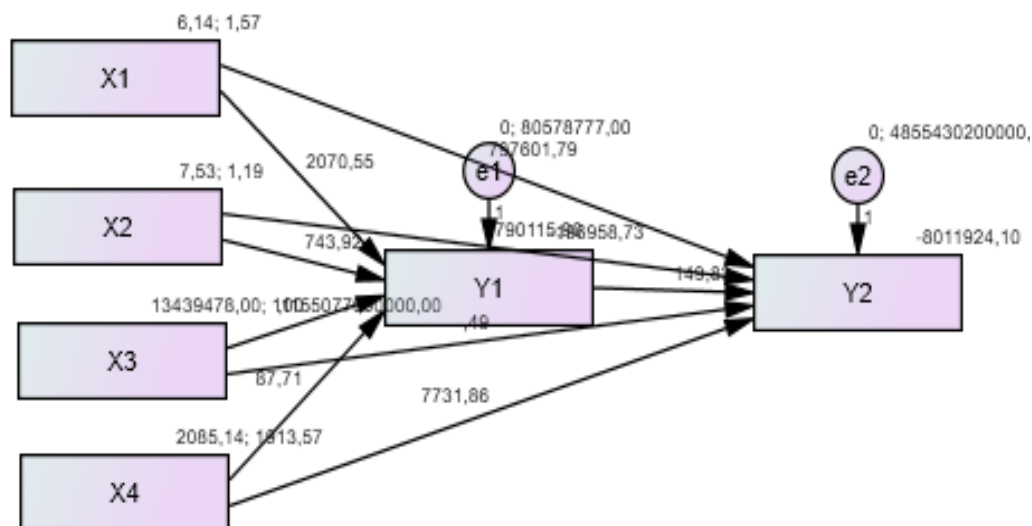
from the Central Statistics Agency, the Ministry of Agriculture and others.

Variable operational limits, to avoid errors in discussing and analyzing problems, the scope of this study is limited in Tanjung Medan District, Rokan Hilir regency, Riau. The scope of this study covers the factors that affect the income of oil palm farmers in Tanjung Medan District, Rokan Hilir Riau Regency, especially the influence of labor, land area, working capital and prices through production on the income of oil palm farmers. For oil palm farmers who became the object in this study are farmers who have their own gardens.

## RESULT

### Path Analysis Results

After forming a model based on the theory then obtained path analysis model so that path diagrams can be built. This path diagram makes it very easy to see the causality relationship to be tested. The form of a complete model path diagram of processed data through SPSS AMOS 22 obtained the following results:



Source: SPSS AMOS 22  
Figure 2 Estimation Results Of The First And Second Structural Equations

Where the equation is as follows:

$$Y1 = 2070,549X1 + 743,923X2 + 0,001X3 + 87,707X4 +$$

$$Y2 = 797601,788X1 - 790115,895X2 + 487X3 + 7731,855X4 + 149,834Y1 +$$



**Table 4 Regression Results Of The First And Second Structural Equations**

			Estimate	S.E.	C.R.	P
Y1	<---	X1	2070,549	873,471	2,370	,018
Y1	<---	X2	743,922	976,832	,762	,446
Y1	<---	X3	,001	,000	2,493	,013
Y1	<---	X4	87,707	20,184	4,345	***
Y2	<---	X1	797601,788	219871,029	3,628	***
Y2	<---	X2	-790115,896	240423,003	-3,286	,001
Y2	<---	X3	,487	,068	7,213	***
Y2	<---	X4	7731,855	5366,558	1,441	,150
Y2	<---	Y1	149,834	23,512	6,373	***

Source: Amos Output

From Table 4 above shows that only the land area variable (X2) that has no effect on production (Y1) and the price variable (X4) that has no effect on income (Y2). The value of P-value of land area (X2) and price (X4) is 0.446 and 0.150, which is above the criteria set, i.e., the number is 5 percent (p-value < 0.05).

While the significant variable is the relationship between X1 and Y1 with p-value sebesar 0, 018 which means X1

individually significantly affect Y1. X3 with Y1 with a p-value of 0.013 which indicates that the variable X3 significantly affect Y1. X4 with Y1 with a p-value of 0.000 which indicates that the variable X4 significantly affect Y1.

Variables X1, X3 and Y1 with p-value of 0.000 and X2 with p-value of 0.001 which shows that the variables X1, X2, X3 and Y1 significantly affect Y2.

**Table 5 Direct, Indirect And Total Influence Of Factors Affecting The Income Of Palm Oil Farmers Tanjung Medan District, Rokan Hilir Riau**

Standardized Direct Effects					
	X1	X2	X3	X4	Y1
Y1	,250	,078	,215	,370	
Y2	,269	-,232	,438	,091	,418

Standardized Total Effects					
	X1	X2	X3	X4	Y1
Y2	,374	-,200	,527	,246	,418

Standardized Indirect Effects With Sobel Test				
	X1	X2	X3	X4
Z Sobel	2,7288116	0,93547469	6,37266077	3,655285
Y2	,105	,033	,090	,155

Source: Amos 22 SPSS Output

### a. Standardized Direct Effects Factors Affecting The Income Of Oil Palm Farmers

Based on Table 5 can be seen the direct influence of Labor (X1), land area (X2), working capital (X3), price (X4) on production (Y1). On the basis of the above estimation results can be put forward labor strength (X1) which can directly determine the change in production (Y1). equal to 0.2502 X 100 percent = 6.2 percent. Land area (X2) against production (Y1) the basis of the above estimation results can be put forward the strength of land area (X2) which can directly determine the change in production (Y1) of 0.0782 X 100 percent = 0.60 percent.

Working capital (X3) against production (Y1) has the power of working capital (X3) which can directly determine the change in production (Y1) of ,2152x 100 percent = 4.6 percent. Price (X4) against production (Y1) has the power to directly determine the change in production (Y1) by ,3702 X 100 percent = 13 percent.

Direct influence of Labor (X1), land area (X2), working capital (X3), price (X4), production (Y1) on income (Y2). On the basis of the above estimation results can be put forward labor strength (X1) which can directly determine the change in income (Y2) of 0.2692 X 100 percent = 7.2 percent. Land area (X2) to income (Y2) has a power that can directly determine the change in

income (Y2) of  $-0.2322 \times 100$  percent = 5.3 percent.

Working capital (X3) to income (Y2) has the power of working capital (X3) which can directly determine the change in income (Y2) of  $0.4382 \times 100$  percent = 19 percent. Price (X4) against income (Y2) has a power that can directly determine the change in income (Y2) of  $0.0912 \times 100$  percent = 0.8 percent. Production (Y1) to income (Y2) has the power to directly determine the change in income (Y2) of  $4.182 \times 100$  percent = 17.4 percent.

#### **b. Indirect Influence With Sobel Test (Standardized Indirect Effects) Factors Affecting The Income Of Oil Palm Farmers**

The criterion of Z Sobel value  $> 1.96$  which means that the variable X significantly affects Y2 through Y1 (Ghozali:2017). In Table 4.18 shows the result of Sobel calculation indirect effect of Labor (X1) on income (Y2) of 0.105 with Z Sobel value of  $2.7288116 > 1.96$  which means that Labor (X1) significantly affect the income (Y2) through production (Y1). Sobel calculation results indirect influence of land area (X2) on income (Y2) of 0.033 with Z Sobel value of  $0.93547469 < 1.96$  which means that land area (X2) significantly has no effect on income (Y2) through production (Y1).

Sobel calculation results indirect effect of capital (X3) on income (Y2) of 0.090 with Z Sobel value of  $6.37266077 > 1.96$  which means that capital (X3) significantly affect income (Y2) through production (Y1). Sobel calculation results indirect effect of price (X4) on income (Y2) of 0.155 with a value of Z Sobel sebesar  $3.655285 > 1.96$  which means that the price (X4) significantly affect the income (Y2) through production (Y1).

#### **c. The Influence Of The Total (Standardized Total Effects) Factors That Affect The Income Of Oil Palm Farmers**

Based on Table 4.18 the total effect of Labor variables (X1), land area (X2),

working capital (X3), price (X4) on income (Y2) through production (Y1). The total influence is obtained by summing the direct influence with the indirect influence. The amount of total labor influence (X1) is 0.246. The effect of land area (X2) of -0.200, the effect of total capital (X3) of 0.527, the effect of total price (X4) of 0.246 and the total effect of production (Y1) on income (Y2) of 0.418.

From the above analysis results obtained significant value of Labor (X1) of  $0.003 < 0.05$ . it can be concluded that directly Labor (X1) positive and significant effect on production (Y1). From the results of the above analysis obtained a significant value of land area (X2) of  $0.344 > 0.05$  it can be concluded that directly land area (X2) has no significant effect on production (Y1). From the above analysis obtained significant value of working capital (X4) of  $0.010 < 0.05$ . then it can be concluded that directly working capital (X3) negative and significant effect on production (Y1). From the results of the above analysis obtained significant value (X4) of  $0.000 < 0.05$ . Then it can be concluded that directly the price (X4) negative and significant effect on production (Y1).

From the above analysis results obtained significant value of Labor (X1) of  $0.000 < 0.05$ . Then it can be concluded that directly Labor (X1) positive and significant effect on income (Y2). From the above analysis obtained significant value of land area (X2) of  $0.000 < 0.05$ . Then it can be concluded that directly land area (X2) negative and significant effect on income (Y2). From the above analysis results obtained significant value of working capital (X3) of  $0.050 < 0.05$ . It can be concluded that directly working capital (X3) has a positive and significant effect on income (Y2). From the above analysis results obtained significant value of price (X4) of  $0.141 > 0.05$ . then it can be concluded that directly the price (X4) does not significantly affect the income (Y2). From the above analysis results obtained significant value of production

(Y1) of  $0.000 < 0.05$ . Then it can be concluded that directly production (Y1) negative and significant effect on income (Y2).

## Hypothesis Test Results

### Test t

Statistical tests basically show how far the influence of all explanatory/independent variables together in explaining the variation of dependent variables. Based on the output of SPSS AMOS 22 in Table 4.10 which contains the value of t and significant path analysis results can be seen that:

- a) there is a positive influence of Labor on the amount of production of oil palm farmers in Tanjung Medan district is marked with a probability value that can be 0.018 this value is less than 0.05 which means H1 is accepted.
- b) there is no influence of land area on the amount of production of oil palm farmers in Tanjung Medan District, marked with a probability value that can be 0.446 this value is greater than 0.05 which means H2 is rejected.
- c) there is a positive influence of working capital on the amount of production of oil palm farmers in the District of Tanjung Medan is characterized by the probability value that can be 0.013 this value is smaller than 0.05 which means H3 is accepted.
- d) there is a positive influence of price on the amount of production of oil palm farmers in Tanjung Medan district is marked by the probability value that can be in the triple star symbol which means the GIS value is very small and certainly smaller than 0.05, thus it can be concluded that H4 is accepted.
- e) there is a positive and significant influence of Labor on the income of oil palm farmers in Tanjung Medan district is characterized by the probability value in the Can is in the triple star symbol which means the GIS value is very small and certainly smaller than 0.05, thus it can be concluded that H5 is accepted.

- f) there is a negative and significant influence of land area on the income of oil palm farmers in Tanjung Medan District, characterized by the probability value of 0.001 which means the value of GIS is smaller than 0.05, thus it can be concluded that H6 is accepted.
- g) there is a positive and significant influence of working capital on the income of oil palm farmers in Tanjung Medan District, marked by the probability value that can be in the triple star symbol which means the GIS value is very small and certainly smaller than 0.05, thus it can be concluded that H7 is accepted.
- h) there is no positive and significant influence on the income of oil palm farmers in the District of Tanjung Medan, marked with a probability value that can be 0.150 this value is greater than 0.05 which means H8 is rejected.
- i) when viewed from the indirect influence, the estimation results show that there is an indirect relationship of labor, working capital and selling price to income through palm oil production in Medan District, Rokan Hilir regency, Riau. While the land area indirectly has no significant effect on income through oil palm production in Medan District, Rokan Hilir regency, Riau.

## Coefficient Of Determination Test

Table 6 Test Results Coefficient Of Determination

	Estimate
Y1	.288
Y2	.645

Source: AMOS Output

Based on Table 6 the value of the coefficient R Square production (Y1) has a value of 0.288 means 28.8 percent of production variables can be explained by the variables of Labor, land area, Capital, price and the rest is 67.6% explained by other variables that are not included in the model of this study.

The value of the coefficient R Square income (Y2) has a value of 0.645 means 64.5 percent of income variables can

be explained by the variables of Labor, land area, Capital, price and production and the rest is equal to 33.8 percent explained by other variables that are not included in the model of this study. There are several studies that have a low R square published by Journal of Management studied by Ferhat Husein and Muhammad Kholiq Mahfud (2015) on the effect of distress risk, firm size, book to market ratio, return on assets, and debt equity ratio to return shares with the value of R square of 0.147 means

14.7 percent of the free variables can explain the dependent variables. In addition, the journal of Hospitality and Tourism Technology, which was researched by jerenimo Garcia-Fernandez, Silvia Martelo, Luisa and Carrion (2018), is about culture, organizational performance and customer loyalty: the case of health clubs has a r square of 0.14 or 14 percent of the free variables, which can explain the dependent variables.

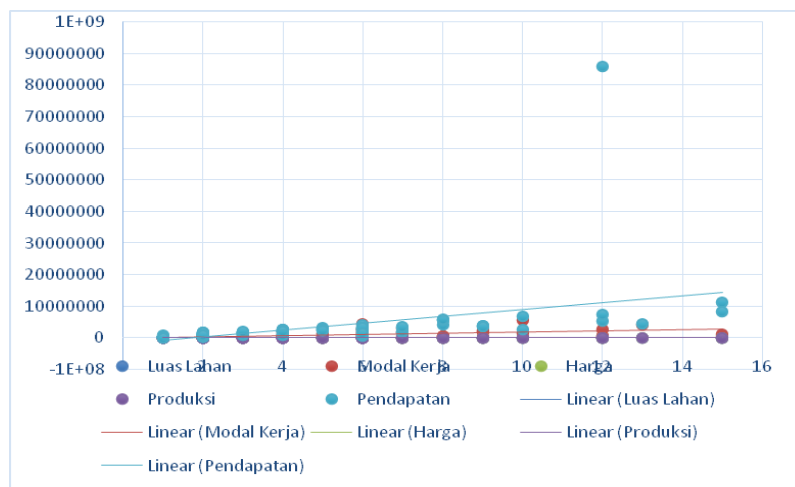


Figure 3 data distribution graph of land area, working capital, price, production and income

Shows the distribution of data on land area, working capital, production, prices and income. Based on the results of scatter plots shows that if the data spread and follow the pattern of linear lines then the value of R square will approach the value of 1, otherwise if the data spread away from the linear line then the value of R square will approach 0. The results of the scatter plot graph above show that the data spreads far from the linear line. This is because the data used in this study have different units and are random, so there are large and small data that make the point of spreading the data away from the linear line. This causes the value of the coefficient R Square in this study is relatively low. The value of the coefficient R Square production (Y1) has a value of 0.288 means 28.8 percent and the value of the coefficient R Square revenue (Y2) has a value of 0.645 means 64.5 percent.

**Model fit test results / Goodness of Fit**

Computational criteria goodness of fit indicators the model of the influence of labor, land area, working capital, and price on income through the production of oil palm farmers in Medan District, Rokan Hilir regency, Riau province is presented as follows.

Table 7 Goodness of Fit Test

Criteria	Cut-Off Value	Model Results	Description
Chi-Square	Expected small	6,911	Good
Probability	> 0,050	0,75	Good
GFI	> 0,900	0,978	Good
AGFI	> 0,900	0,844	Good
TLI	> 0,900	0,906	Good
CFI	> 0,950	0,981	Good

Source: Syamsul Bahri, Fahkry Zamzam (2014).

Based on Table 7 shows that all the criteria used to assess a model has a good value. Therefore, the model can be accepted because of the conformity between the model and the data. If the model is described, the path coefficient that explains

the relationship between production factors and income of oil palm farmers in Tanjung Medan District, Rokan Hilir regency, Riau will look like Figure 3

## **DISCUSSION**

### **Influence Of Labor On Production**

The value of standardized coefficient beta is 2070.549 with a significant probability value of  $0.018 < 0.05$  which means that Labor has a positive and significant effect on palm oil production. Labor has a positive relationship to production means that every increase in labor 1 person will increase production by 2,070.549 kg of oil palm in Medan District, Rokan Hilir regency, Riau province.

These results are in line with research conducted by Damayanti (2013), namely the variable total use of labor in this study gives a positive coefficient with the value of the coefficient of elasticity of 0.045816 ( $p < 0.05$ ). Each increase in the use of labor in the family by 1% will increase production by 0.045816%. Labor in the family is one of the important factors of production in the farmer's business.

The use of Labor on productive and densely populated agriculture is always higher than the need for subsistence. The increase in the number of workers encourages more intensive management of oil palm farming. During this time in the place of production lack of maintenance personnel, whereas plant maintenance significantly increases crop production. This employment opportunity encourages the employment opportunities of oil palm farmers to increase. When the number of workers increases, more and more energy will be used for business. Labor is employed starting from land preparation, land processing, planting, fertilizing, weeding, spraying, harvesting, transportation and drying.

The results of this study are also relevant to Manggala research (2018), namely labor variables have a positive and significant effect on production in Sumengko village with a probability value

of 0.000 less than the value of 0.05. Farmers in Sumengko village generally add labor to help or speed up the production process, the average use of labor around 29-48 people, no wonder if the more labor it will be faster and increase production.

Furthermore, Kardila research (2019) states that Labor has a partial influence on Rubber Production (Y) in Bongan District, West Kutai Regency. Based on the results of the t test with the T value of Labor count 2.140 and a significant level of 0.036. Then Rastana research (2020), namely labor has a partial positive and real effect on rice production in Kediri District, Tabanan Regency.

### **Influence Of Land Area On Production**

The value of standardized coefficient beta is 743.923 with insignificant probability value of  $0.446 > 0.05$  which means the land area has a positive but not significant effect on oil palm production. Land area has a positive relationship to production means that every increase in land area of 1 Ha will increase production by 743,923 kg of oil palm in Medan District, Rokan Hilir regency, Riau province.

The results of this study are in line with Neonbota (2016) which states that t count (0.858)  $<$  t table (1.664) thus  $H_0$  is rejected and  $H_a$  is accepted. It can be concluded that the land area can partially but not significantly affect the production of farmers. This is due to the regression coefficient of (0.156) so that if there is an increase in land area by 1 unit will increase production by (0.156) units when other factors are considered fixed.

Agricultural land area will affect the scale of the business that will ultimately affect the efficiency or not of an agricultural business (Mubyarto, 2002) land area resulted in efforts to take action that leads to efficiency will be reduced, according to the reality that occurs in the field of increasing land area is difficult to be realized due to several factors, including:

Weak supervision on production factors such as seeds, fertilizers, medicines

and labor. Most farmers lack knowledge in choosing good palm seeds, due to the number of seed agents that offer low prices for palm seeds. Then because of this lack of knowledge, farmers also prefer cheap palm seeds when not necessarily the seeds are of good quality, this is the main cause of poor production. Then palm fertilizer where appropriate conditions in the field sometimes farmers / workers are often in sowing fertilizer is not evenly distributed, and sometimes the type of fertilizer used tends to be less good dikarekan capital for less fertilization costs.

The limited supply of labor around the area, ultimately affect the efficiency of the agricultural business. According to what happened in the field that at this research site sometimes farmers have difficulty in finding labor in harvesting, fertilizing, completion and others. Because in addition to working on the land of farmers (pengupah) most people also work on their land in addition to the harvest schedule that often occurs simultaneously between the workers with the hiring party and sometimes also during the time of fertilization, hard grass removal, completion of Labor is a bit difficult in the can because many of the workers take a job working in the garden/land farmers (pengupah) others as well.

Limited supply of capital to finance agricultural enterprises. Often in the field there is a limited supply of farmers ' capital in the palm oil production process that will lead to poor production such as: lack of cost in the purchase of quality seeds, the purchase of medicines, the purchase of good fertilizer, wage labor and so forth.

This is also reinforced by The Theory of Sicut and Arndt which states that in agriculture, the supply of arable land is not fixed and they do not know how to preserve the productivity of land so that the land they cultivate tends to be infertile which results in poor quality crop production thus reducing the value of the selling price of oil palm (Astari, 2016). Although farmers cultivate large areas of

land but not accompanied by the preservation of land fertility will also affect the quality of production and income of farmers.

These results are also in accordance with the proposed by Mufriantie (2014) that the variable land area (X1) has no significant effect on spinach production with t count of 0.595 smaller than T Table 5 percent of 2.030. Variable land area effect is not significant, allegedly because the planting area of spinach at the research site is relatively small. The value of land area regression coefficient (X1) of 0.046 means that every addition of 1 (one) percent of land area will increase production by 0.046 percent assuming other variables are considered fixed.

Furthermore, the results of this study are relevant to Astari research (2016), namely the effect of land area (X1) on production (Y1) is positive but not significant. Then the research conducted by Yanutya (2013), showed that partially there are 3 independent variables used, namely land area, labor costs, and age do not significantly affect the income of sugarcane farmers in Jepon District Blora Regency.

### **Effect Of Working Capital On Production**

The value of standardized coefficient beta is 0.001 with a significant probability value of  $0.013 < 0.05$  which means working capital has a positive and significant effect on palm oil production. Working capital has a positive relationship to production means that every increase in working capital of Rp 1 will increase production by 0.001 kg of oil palm in Medan District, Rokan Hilir regency, Riau province. These results are in line with research conducted by Apriadi (2015) that the amount of capital has a significant and positive effect on farmers ' income. If it is assumed that all variables are fixed then every 1% increase in capital will increase 0.71% of farmers ' income.

Capital is all forms of wealth that can be used directly or indirectly in the production process to increase output. In the

economic sense, Capital is the good or money that together the factors of land production and labor produce new goods and services. Capital is an important element of farming. In the economic sense, Capital is a good or money together with other factors of production and labor and management produce new goods.

This result is also in accordance with what was stated by Kardila(2019), namely capital partially affects rubber production in Bongan District, West Kutai Regency. Based on the results of the T test with T value count 2.738 and a significant level of 0.008. Then Sitanggang research (2020) explained that capital has a regression coefficient of 0.093 stating that if capital is increased by 1% (assuming that the value of the coefficient of other variables remains or does not change) then the production value will increase by 0.093.

### **Effect Of Price On Production**

The value of standardized coefficient beta is 87.707 with a significant probability value of  $0.000 < 0.05$  which means the selling price of FFB has a positive and significant effect on palm oil production. The selling price of FFB has a positive relationship to production, meaning that every increase in the selling price of Rp 1 will increase production by 87,707 kg of oil palm in Medan District, Rokan Hilir regency, Riau province.

Expectations of the sale price of FFB and a significant amount of production indicate that farmers ' households always have a desire to do oil palm planting because the District of Medan, Rokan Hilir regency, Riau province has biophysical conditions suitable for oil palm farming so that the expected profit will be obtained after production. In line with the results of research Fariyanti (2007), the attitude of farm households in carrying out production activities can be seen from the variation in price as one measure in seeing the risk of production. From the results of the alleged production expectations have a positive sign influenced the selling price of FFB. Efforts

that can be made to deal with the risk of production in oil palm crops caused by Prices is very important to promote crop diversification programs on cultivated land asyarakat. Diversification of agriculture itself is an effort to diversify the type of business or agricultural crops to avoid dependence on one of the farms.

The results of this study are also relevant to the concept of Santoso research (2015) which explains soybean production (ton) is influenced by soybean imports (ton) and farmer prices (USD/ton) with the following formula.

$$PK = a_0 + A_1 IK + A_2 HP$$

Description:

PK = soybean production (tons),

IK = soybean import (ton),

HP = farmer Price (USD / ton).

The result of this research is farmer price (HP) and soybean import (IK) together (simultaneously) able to explain 51.4% diversity of soybean production population. Independent variables together affect the value of soybean production at a moderate level so that it can be accepted because the free variable is not a direct production factor such as land area, fertilizer use, superior seeds, and labor. The results of the statistical test T shows that the independent variable has a probability value  $< 0.10$ . This also shows that each independent variable coefficient can be used to explain the effect of farmers ' price variables and soybean imports on soybean production with a confidence level of 90%.

### **The Influence Of Labor On Income**

The value of standardized coefficient beta is 797601.788 with a significant probability value of  $0.000 < 0.05$  which means that Labor has a positive and significant effect on the income of oil palm farmers. Labor has a positive relationship to income means that every increase in labor 1 person will increase the income of oil palm farmers by Rp 797,601.788 in Medan District, Rokan Hilir regency, Riau province.

Labor is an important factor in farming, especially the labor of families and their family members. If it can still be done by the family's own labor, there is no need to hire outside labor, so that the level of cost efficiency incurred is able to provide very significant income for peasant families (Suratiah, in Nugraha, 2021). Labor has an important role because it can be productivity. The relationship between Labor and income that Labor has a positive effect on the income/ income of farmers by looking at the need for Labor on the land.

Labor under this provision includes labor that works inside and outside the Labor relationship, with the main means of production in the production process is its own energy, both physical and mental energy. Labor shortages will result in the retreat of planting so that it affects plant growth, productivity and product quality so that the results obtained by farmers also affect. Labor when utilized optimally will be able to increase production to the maximum.

The results of this study are relevant to Sitanggang (2020) explained that Labor has a regression coefficient of 0.408 stating that if Labor is increased by 1% (assuming that the value of other variable coefficients remains or does not change) then the production value will increase by 0.408. But on the contrary, if the labor force falls by 1% (assuming that the value of the coefficient of other variables remains or does not change), it will decrease production by 0.408.

Then a study by Nugraha (2021) which states that the Labor variable has an IndiGo coefficient of 0.395 and a significance level of  $0.034 < \text{ironic} = 0.050$ . This means that Labor has a positive and significant effect on farmers' income. If the workforce increases by 1%, it will increase farmers' income by 0.395%. Furthermore, hadijanto's research (2020) explains that Labor has a positive and significant effect on farmers' income. With the condition that the use of labor that has a certain

productivity will be able to increase crop yields with efficient use of inputs as well.

### **The Effect Of Land Area On Income**

The value of standardized coefficient beta is  $-790115.895$  with a significant probability value of  $0.001 < 0.05$  which means that the land area has a negative and significant effect on the income of oil palm farmers. Land area has a negative relationship to income means that every increase in land area of 1 Ha will decrease the income of oil palm farmers of Rp 790,115.895 in Medan District, Rokan Hilir regency, Riau province.

The results of this study are relevant to Astari (2016) shows that the land area (X1) with a coefficient of  $-0.017$ , the statistical t value of  $0.694 < 1.96$  with a p value of  $0.488 >$ , the coefficient of  $-0.05$ . This means that the land area (X1) does not affect the income of farmers (Y2). Then research Apriadi (2015) which explains that the land area (X3) does not significantly affect the income of farmers at the level of confidence of 95%.

Extensive control of agricultural land is something that is very important in the process of production or farming and agricultural business. In farming, for example, ownership or control of narrow land is certainly less efficient than wider land. The narrower the business land, the less efficient the farming business is unless the farming business is run in an orderly manner. Extensive ownership or mastery associated with the efficiency of farming.

However, in this study, the land area negatively affects the income of oil palm farmers in Tanjung Medan District, Rokan Hilir regency, because the land area is not followed by the amount of productive oil palm production. Farmers simply plant using traditional methods without involving more effective plantation technology and innovation to support optimal production results.

In addition, farmers also do not know how to choose good quality oil palm seeds, causing poor production results,



according to what happens in the field that there is rarely socialization about good oil palm farming that's how good it is in terms of selection of types of seeds, fertilizers, medicines, penunasan, harvesting and others it also resulted in that any area of land owned by farmers if the farmers are lacking understanding of oil palm farming will still produce poor quality production it also resulted in income will decrease. This is in line with the previous regression results which stated that the land has no significant effect on oil palm production.

### **Effect Of Working Capital On Income**

The value of standardized coefficient beta is 0.487 with a significant probability value of  $0.000 < 0.05$  which means working capital has a positive and significant effect on the income of oil palm farmers. Working capital has a positive relationship to income means that every increase in working capital of Rp 1 will increase the income of oil palm farmers by Rp 0.487 in Medan District, Rokan Hilir regency, Riau province.

This result is also in accordance with the proposed by Septiani (2019), the value of t in the capital variable is 3.041 greater than ttable which is 2.108 and with the significance of 0.041 smaller than 0.05. That is, capital has a positive effect on people's income.

Capital is the most important aspect or wealth used by farmers to produce the next result. Capital in farming can be classified as a form of wealth in the form of money and goods used to produce something either directly or indirectly in a production process (Soekartawi, in Pradnyawati, 2021).

In addition, it is the most important aspect in the activities of a business. Without having capital, a business will not be able to run even though other conditions for establishing a business are already owned. Capital is a factor that determines the magnitude of production and income. The lack of capital in farming will cause the use of production facilities to be very limited which in turn will affect production

and income (Karyanto, in Pradnyawati, 2021).

These results are relevant to a study conducted by Kosmayanti & Ermiati (2017), which states that land area partially provides a significant influence on income. The results of this study are also in line with the research conducted by Isfrizal & Rahman (2018), which states that the variable capital has a significant effect on income.

### **Effect Of Price On Income**

The value of standardized coefficient beta is 7731.855 with a significant probability value of  $0.150 > 0.05$  which means the selling price of Tbsberperfaat positive but not significant to the income of oil palm farmers. The selling price of FFB has a positive relationship with income, meaning that every increase in the selling price of FFB Rp 1 will increase the income of oil palm farmers by Rp 7,731.855 in Medan District, Rokan Hilir regency, Riau province.

The results of this study are not in line with Susilo's research (2019) which shows that selling prices have a significant partial influence on farmers' income. Then it is not in line with Wahab's research (2019) which explains that prices have a significant effect on the income of oil palm farmers in peace-loving KUD. Furthermore, it is not in line with Aswan's research (2020), i.e. the production factors that have a significant influence on farmers' income are the amount of production and the selling price of oil palm.

The results of selling price research are positive but not significant because the selling price of oil palm is often influenced by the state of competition that exists and is due to the price always fluctuates (erratic) and supported by the production of oil palm is a little, as well as the quality of oil palm is low and the number of Palm thieves/ ninja who always steal oil farmers. In this competition, many oil palm farmers are actively facing a lot of farmers as well. The large number of oil palm farmers and farmers will make it difficult for individual

oil palm farmers to sell at a higher price to other farmers. Whereas setting the right selling price is one of the important factors in the effort to obtain profit. It is less meaningful if a company can produce goods very well but does not set the right selling price for its production goods.

The results of this study are still relevant to Triyanto (2017) who explained that the selling price of oil palm FFB is not significantly correlated with the income of oil palm farmers in Labuhan Batu Regency. Based on the correlation test selling price of FFB with income of oil palm farmers has a significant probability value of  $0.974 > 0.05$  With  $R^2$  value of 0.06%. This means that by 6% the selling price of FFB affects the income level of oil palm farmers.

### **Effect Of Production On Income**

The value of standardized coefficient beta is 149.834 with a significant probability value of  $0.000 < 0.05$  which means that palm oil production has a positive and significant influence on the income of oil palm farmers. Palm oil production has a positive relationship to income means that every 1 kg increase in production will increase the income of oil palm farmers by Rp 149,834 in Medan District, Rokan Hilir regency, Riau province.

This result is also in accordance with what was stated by Pradnyawati (2021) the value of the coefficient of the amount of production of 0.104 is positively marked, which means that the area of land has a positive effect on income. Each increase in the amount of production of one unit, the value of income increases by 0.104. The probability value of 0.036 which proves the effect of production has a positive and significant effect on farmers' income.

If the demand for production is high, prices at the farm level will be high, so that at the same cost farmers will obtain higher incomes. Conversely, if farmers have managed to increase production, but prices fall, then farmers' income will also fall (Suratiah, in Pradnyawati, 2021).

Production affects farmers' income because the higher the production, the greater the acceptance received by farmers (Asmara & Nurholifah, 2010).

According to Rahardja in Pradnyawati (2021), production can be divided into three, namely the first total production (total product) is the amount of production produced from the use of total production factors, the second Marginal production (marginal product) is additional production due to the addition of the use of one unit of production factors, the third average production (average product) is the average output produced per unit of production factors.

The results of this study are in line with the statement (Asmara & Nurholifah, 2010) which states that production affects farmers' income because the higher the production, the greater the acceptance received by farmers. The results of this study are in line with research conducted by Alitawan & Sutrisna (2017), which states that production has a positive effect on income. The results of this study are also in line with research conducted by (Julainsyah & Riyono, 2018) which states that production significantly affects income.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **CONCLUSIONS**

Based on the results of research and analysis that has been described in the previous chapter, it can be concluded as follows:

1. Labor (X1) has a positive and significant effect on the production (Y1) of oil palm in Medan District, Rokan Hilir regency, Riau.
2. Land area (X2) positively insignificant effect on oil palm production (Y1) in Medan District, Rokan Hilir regency, Riau.
3. Working capital (X3) has a positive and significant effect on oil palm production (Y1) in Medan District, Rokan Hilir regency, Riau.

4. The price (X4) has a positive and significant effect on the production (Y1) of oil palm in Medan District, Rokan Hilir regency, Riau.
5. Labor (X1) has a positive and significant effect on the income (Y2) of oil palm farmers in Medan District, Rokan Hilir regency, Riau.
6. Land area (X2) has a negative and significant effect on the income (Y2) of oil palm farmers in Medan District, Rokan Hilir regency, Riau.
7. Working capital (X3) has a positive and significant effect on the income (Y2) of oil palm farmers in Medan District, Rokan Hilir regency, Riau.
8. Price (X4) positive effect is not significant to the income (Y2) of oil palm farmers in Medan District, Rokan Hilir regency, Riau.
9. When viewed from the indirect influence, the estimation results show that there is an indirect relationship between labor, working capital and selling price to income through palm oil production in Medan District, Rokan Hilir regency, Riau. While the land area indirectly has no significant effect on income through oil palm production in Medan District, Rokan Hilir regency, Riau.

## RECOMMENDATIONS

The suggestions of researchers from the research that has been done are as follows:

1. Considering that the work as an oil palm farmer is one of the professions of the community, the Rokan Hilir regency government is expected to be able to pay attention to the welfare of oil palm farmers. Provide access to capital to improve the technology used so that the production process of oil palm harvest can be more efficient. In addition, the local government also needs to conduct training to increase the experience of farmers and increase productivity.
2. The government should make socialization on oil palm farming so that

farmers' knowledge increases on how to cultivate good land, in terms of efforts to fertilize oil palm land, oil palm land care, seed selection and so on that can support oil palm farming in Tanjung Medan District.

3. The government should pay more attention to the factors supporting the success of society in improving their economy. Including activities to facilitate the sale of oil palm crops. The pattern of sales and marketing of Palm heads should not involve too many marketing actors in it. It is intended that farmers get results / income in accordance with the quantity and quality of oil palm harvest obtained.

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