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## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/14726  
DOI URL: <http://dx.doi.org/10.21474/IJAR01/14726>



### RESEARCH ARTICLE

#### DETERMINANT OF PEPPER PLANTATION PRODUCTIVITY TOWARDS THE LOCAL ORIGINAL INCOME AND ITS IMPLICATIONS ON FARMERS' EXCHANGE RATES IN BANGKABELITUNG ISLANDS INDONESIA

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#### Manuscript Info

##### Manuscript History

Received: 15 March 2022  
Final Accepted: 17 April 2022  
Published: May 2022

##### Key words:-

Planting luas, Domestic Investment, Banking Financing And Pepper Prices, Pepper Plantation Productivity, Local Native Income, Farmers Exchange Rate and Bangka Belitung Provinces

#### Abstract

The decline in pepper productivity in Bangka Belitung Islands Province is due to the fact that most pepper plantations are people's plantations that still use traditional cultivation techniques without adequate technological innovations. The purpose of this study is to find and analyze the influence of planting area, domestic investment, banking financing and pepper prices on the productivity of pepper plantations and their implications on the native income of the region and the exchange rate of farmers in the Bangka Belitung Islands Province. The data analysis used in this study is a linear regression with the Ordinary Least Square approach. The results showed that (1) planting area, domestic investment, banking financing and pepper prices both simultaneously and partially have a significant and positive effect on the productivity of pepper plantations, (2) the productivity of pepper plantations has a significant and positive effect on Local Original Income, (3) Local Original Income has a significant and positive effect on farmers' exchange rates, (4) subsequent research findings, the influence of Local Original Income resulting in Bangka Belitung Islands Province is significantly able to have an impact on increasing welfare of pepper farmers.

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#### Introduction:-

The agricultural sector in Indonesia has a very important and strategic role in national development. Its role is evident in the country's foreign exchange revenue through exports, providing employment, meeting domestic consumption needs, raw materials for various domestic industries, obtaining added value and competitiveness and optimizing the processing of natural resources in a sustainable manner.

For this reason, the implementation of agricultural development requires a comprehensive policy package that is able to increase the competitive advantage of various potential commodities to increase added value while ensuring the sustainability of national agricultural development in the midst of global trade and realizing food self-sufficiency.

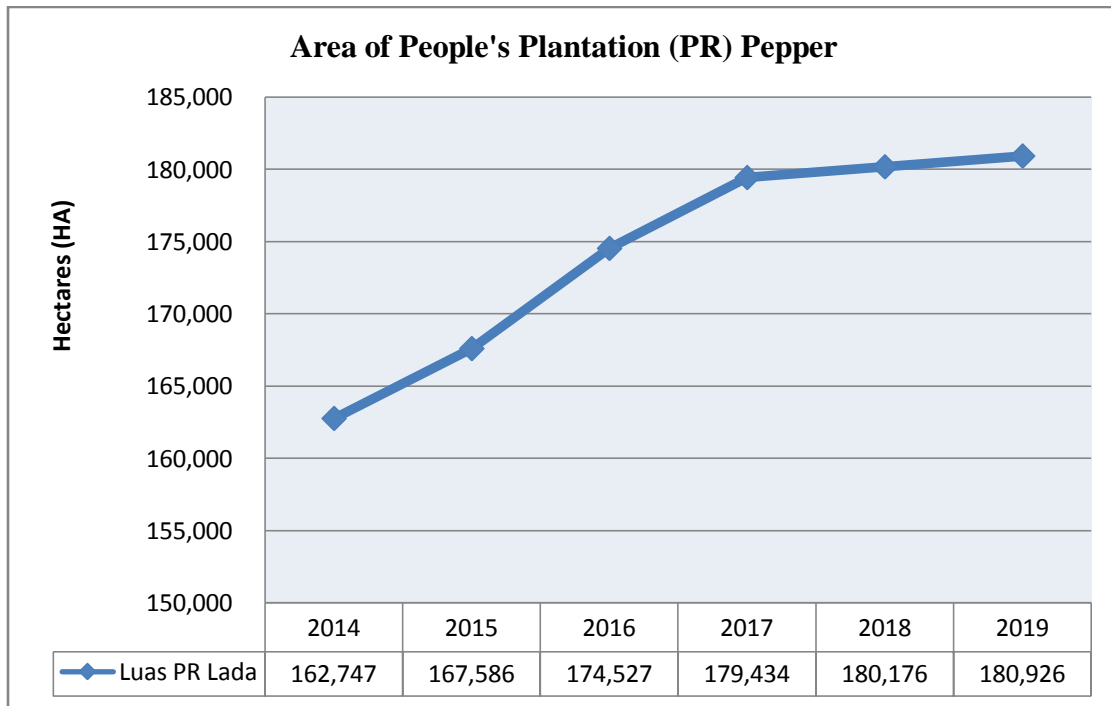
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The development of plantation sub-sectors as part of the development of the agricultural sector and national development is one of the important potentials in efforts to improve people's welfare. The strategic role of the plantation sub-sector in improving the national economy is illustrated through its contribution in various ways, one of which is as a contributor to Gross Domestic Product (GDP). In addition to being a contributor to GDP, the plantation sub-sector also contributes to building a national economy with a high investment value; contribute to balancing the trade balance of national agricultural commodities; the country's foreign exchange source of export commodities; contribute to the increase in state revenues from excise, export taxes and customs duties; provision of food and industrial raw materials; labor absorber; as well as renewable biofuel and bioenergy providers.

Pipernigrum is one of the commodities of the plantation subsector that has made a real contribution as a source of foreign exchange, employment provider, and source of income for farmers. To increase the role of pepper in Indonesia's economic growth, steps are needed to develop and increase the competitiveness of Indonesian pepper in the world market. In order to increase competitiveness, adequate technological and institutional innovation support is needed so that Indonesian pepper farming businesses can have high productivity. According to Yuhono (2017) 99 percent of pepper plantations in Indonesia are still going on traditionally so that there is still limited use of fertilizers and medicines, the use of original seeds, and the low utilization of cultivation technology and post-harvest technology. Cultivation patterns that are still traditional with the scale of people's plantation businesses, are suspected to be the cause of fluctuations in the quantity and quality of pepper produced in each harvest.

People's gardening dominates the area of Indonesian pepper as a whole. This can be seen in figure 1 below:

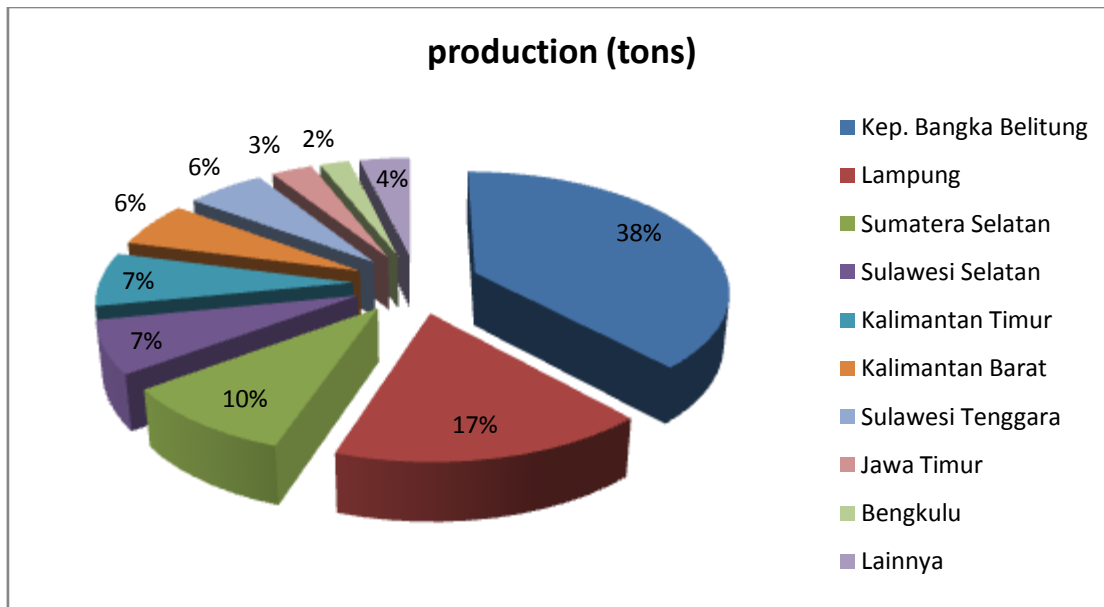


Source: Directorate General of Plantations, processed

Figure 1:- The Development of The Vast Area of Pepper People's Plantations in 2014-2019 in Indonesia.

The area of pepper people's plantations in 2014-2019 tends to increase. The increase in the area of people's plantations for pepper commodities is quite significant occurred in 2014-2017 with an average increase of 3.31% while in 2017-2019 the increase in the area of pepper people's plantations was not very significant with an average increase of 0.57%.

In 2019, there were several largest pepper producing provinces in Indonesia, namely Bangka Belitung, Lampung Province, South Sumatra Province, South Sulawesi, East Kalimantan, West Kalimantan and Southeast Sulawesi with a total contribution of 90.26% to the total average production of Indonesian pepper. This can be seen in figure 2 below:



Source: Directorate General of Plantations, processed

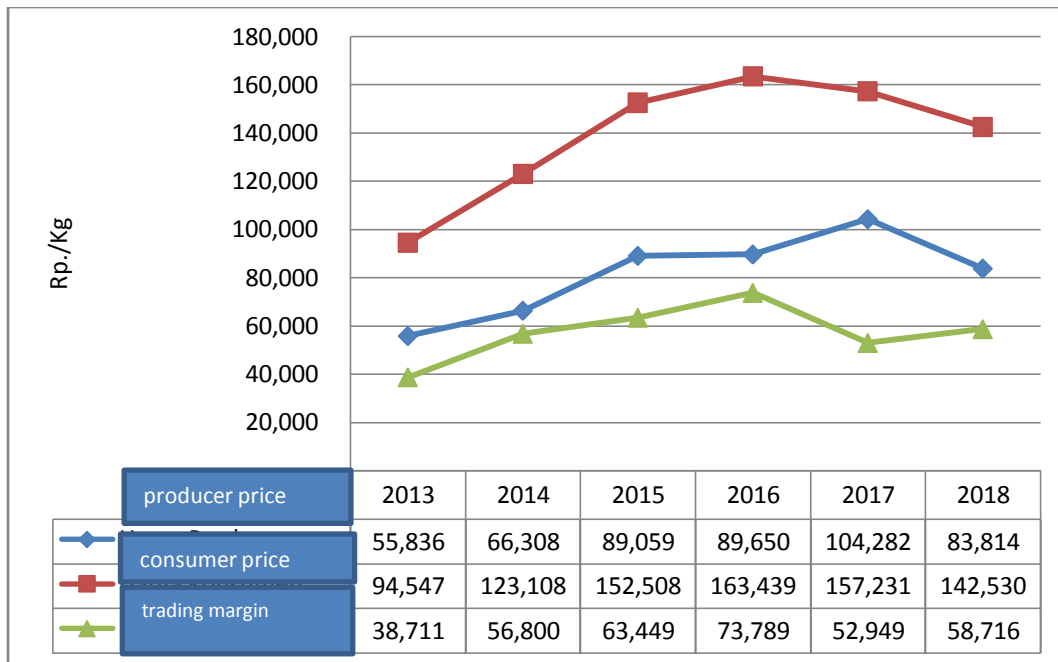
**Figure 2:-** Provincial Average Production Contribution Pepper Centers in Indonesia.

The largest pepper producing production is Kep. Bangka Belitung at 38% and followed by Lampung, South Sumatra and so on (figure 2). As the center of the production of kep. Bangka Belitung pepper plantations contributes quite a lot to the total production of Indonesian pepper. The obstacles faced by the pepper production center are the reduced productivity of pepper plantations every year, the pepper plantation system which is still a people's plantation so that the quantity and quality produced are still diverse, and the reduced number of farmers who grow pepper in this province.

The productivity of pepper plantations is the ability to produce pepper in the overflow and a certain period of time or productivity of pepper plants is determined in units of tons / ha / year. If there are problems in productivity, production also experiences problems. Problems in crop cultivation will actually affect productivity and production becomes lower because the unit price per kg is not proportional to the capital spent during the planting process until the harvest period takes place.

Pepper is one of the plants that breed with seeds, but many farmers prefer to do the harvesting to develop it and is also a vine that lives in tropical climates where the seeds are very often used as a cooking spice. pepper is sometimes part of the recipe of the mainstay cuisine (Mediatani, 2015). In addition to food, pepper is also used for cosmetics, health and others.

Price is a unit of value given to a commodity as counterprestasi information from the producer / owner of the commodity. In economic theory it is stated that the price of a goods or service whose market is competitive, then the high low price is determined by market demand and supply. Therefore, in this study the market price of pepper will be reviewed in terms of supply and market demand (Ari Sudarman, 2013). The price of pepper is farmer-level and can be seen in Figure 3:



Source: BPS, processed Pusdatin

Figure 3:- Development of Producer, Consumer and Pepper Trade Margin Prices in Indonesia, 2013-2018.

Factors that affect the productivity of pepper plantations are: (1) land that is one of the factors of production, where agricultural products are produced that have a considerable contribution to agricultural business (Mubyarto 1989). (2) Domestic investment of PMDN on the grounds that one of the indicators of the success of a region's economic development is the establishment of an investment climate in the plantation subsector. Investment (investment) invested in the agricultural sector, especially the plantation subsector, is expected to be able to encourage an increase in output that affects the increase in income and contributes greatly to the agricultural sector as the backbone of the economy. (3) Banking costs due to the role of the banking sector in an economy are crucial, especially as a provider of funds for financing the agricultural sector and to increase the capital of farmers in order to expand their business. This financing policy is intended to accelerate the people's economic movement and encourage the process of agricultural production (Ronga, 2015). (4) Pepper price's because the price of pepper is one of the factors that affect farmers in making the decision to sell pepper. At the time of high pepper prices farmers will sell their produce, but there are also farmers who do not sell because they think the price of pepper will be more expensive. In addition, there are also farmers who continue to sell their pepper even though the price received is not in accordance with what farmers expect because of urgent needs such as buying production facilities to support the pepper farming business. (5) Local Original Income has a role in the plan to increase regional capabilities in terms of finance so as not to always rely on the central government and one of its efforts to increase through agricultural production productivity.

Based on the above, the author wants to examine the productivity of pepper plantations in the Bangka Belitung archipelago which is the center of the largest people's pepper plantations in Indonesia and the factors that affect it. Then the productivity of the pepper plantation has an impact on the Local Original Income.

The formulation of the problems that will be studied in this study is:

1. How does the widespread influence of planting, domestic investment, banking financing, and pepper prices simultaneously and partially affect the productivity of pepper plantations in Bangka Belitung Islands Province?
2. How is the influence of productivity of pepper plantations on the Local Original Income in Bangka Belitung Islands Province.
3. How is the influence of Local Original Income on The Farmer Exchange Rate in Bangka Belitung Islands Province

## Literature Review:-

**Production Productivity**, in agricultural economics is a comparison between the results that are expected to be received at the time of harvest (receipt) with the costs (sacrifices) that must be incurred. The technical seara of productivity is the multiplication between efficiency (business) and land capacity (Mubyarto, 2011, p. 68) and according to Samuelson and William (2014, measures of productivity may vary, depending on aspects of output or input used as basic aggregates, for example: labor productivity index, direct cost productivity, total cost productivity, energy productivity, and raw material productivity.

**Plant area.** The area of land to be planted with a commodity and the land is also an important factor in the agricultural sector. Land has an economic value that can be very high and will benefit the owner and can increase yields. Meanwhile, according to Usman and Juliyani (2018), the amount of area managed in trying to produce production. According to Misharniet al., (2022), the wider the land available in a region or region, the more opportunities to carry out business or business activities. Previous researches related to land area with plantation productivity were conducted by PonniahSivarajah and Randima Wickramasinghe (2016), YudiyantoYudiyanto, et al., (2014), AlmasdiSyahzaet al., (2013) and I PutuIrvan, Ni NyomanYuliarmi (2019).

**Domestic investment** is domestic investment. According to the provisions of Law No.25 of 2007, domestic modal is an activity of investing to do business in the territory of the Republic of Indonesia carried out by domestic investors using domestic capital regulated by the provisions of Article 1 of Law No.25 of 2007. Previous research conducted by E Karmawatiet al., (2019), I.B. Adeoyeet al., (2014), AlmasdiSyahzaet al., (2013), Pablo Pacheco et al., (2017), Rusli Anwar et al., (2014) in connection with investment with productivity.

**Banking Financing is** funding issued to support planned investments provided by banks. According to Kasmir (2013), banking financing is the provision of money or bills that can be equated with it, based on an agreement or agreement between the bank and other parties that requires the financed party to return the money or bill after a certain period of time in exchange or profit sharing. And according to Kasmir the elements contained in the provision of a financing facility are: trust, agreement, term, risk and reply of services. Research related to banking financing affecting the productivity of production is conducted by Lara Mustikaet al., (2019), AchmadSoediroaet al., (2017) and Hamdanet al., (2018).

**Price is** used to provide financial value to a product. According to Ari Sudarman (2013), the price of a product / commodity is reviewed in terms of demand and supply. And according to LiliSalfinaet al., (2022) prices are determined by the intersection between the demand and supply of goods and services in pasar. For karakteristik agricultural commodities supply and demand for food / agricultural commodities is indeed 'unique' because both tend to be inelastic to price changes. The research on the relationship of price with production productivity was conducted by E Karmawatiet al., (2020), I K Ardanaet al., (2019), Anju Jacob and Elsamma Job (2015), M. Hemaetal., (2017) and Hamdanet al., (2018).

**Local Original Income** according to Djaenuri (2012) states that Local Original Income is income for regions originating from the area itself based on the provisions of applicable local regulations. And Noor FariedaAwwaliyahet al., (2019), explained that the ability of a region to dig Local Original Income will affect the development of the area, and the greater the contribution of local native income to the total regional budget, the better the government's performance. Meanwhile, according to SyofriaMeidonaet al., (2021), the increase in Local Original Income can be done through Regional Taxes, Regional Levies, Separate Regional Property Management Results, and Other Legitimate Local Original Income to the maximum or by expanding other regional tax objects. The results of research that support the relationship between local native compaction and productivity were conducted by Rahman (2016), I PutuIrvan, Ni NyomanYuliarmi (2019), JulizaHidayatiet al., (2015), RusliAnwar et al., (2014), Pablo Pacheco et al., (2017).

**The Farmer Exchange Rate** in Ruauw's research (2010) in his research on farmer welfare is the Farmer Exchange Rate (FER). Community welfare is a number of satisfactions obtained by a person from the results of consuming the income he receives. In liliSalfina et al (2022) research, the Farmer Exchange Rate (NTP) is the ratio of the price index received and the price index paid by farmers. The results of research that support the relationship between farmers' exchange rates and productivity were conducted by I PutuIrvan and Ni NyomanYuliarmi (2019), Hamdanet al., (2018), Taufik Akbar et al., (2019) and Indah Lestari et al., (2018).

**Methods Of Research:-**

Obyek research in several districts and cities of Bangka Belitung Islands Province, namely Bangka regency, West Bangka regency, South Bangka regency, Central Bangka regency, Belitung regency, East Belitung regency, and Pangkalpinang city which is the location where pepper plantations are growing rapidly. Data variable research from 2014 to 2019 using panel data related to planting area, domestic investment, banking financing and pepper prices, productivity Lada plantations, local native income, and farmers exchange rates of 7 (seven) cities and districts in the Bangka Belitung Islands province.

The panel's data regression analysis techniques in this study used the Ordinary Least Square (OLS) engineering approach. Estimation methods using panel data can be grouped in the form of Common Effect, Fixed Effect and Random Effect models. The selection of the best model between the common effect, fixed effect and random effect methods is carried out through 2 stages, namely: Chow Test and Hasman Test. The best model will be formed regression equations as follows:

1. Model I:  
 $Y1 = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + \epsilon_{t1}$
2. Model II  
 $Y2 = \beta_0 + \beta_5 \hat{Y}1 + \epsilon_{t2}$
3. Model III  
 $Z1 = \beta_0 + \beta_6 \hat{Y}2 + \epsilon_{t3}$

Information:

- $\beta_0 \dots n$  = Equation Constant 0 to 7
- $\epsilon_1 \dots n$  = Standard Error equation 1 to 4
- $\hat{Y}1$  = Pepper Plantation Productivity
- $\hat{Y}2$  = Local Original Income
- $\hat{Z}1$  = Farmer Exchange Rate
- $X1$  = Planting Area
- $X2$  = Domestic Investment
- $X3$  = Banking Financing
- $X4$  = Pepper Price

To find out the influence of all independent variables contained in the model both partially and simultaneously on dependent variables is carried out by the t test and the F test.

**Results And Discussion:-**

After testing to get the best model with chow and hausman tests, then for models I, II, and III obtained fixed effect models.

**ModelsI:**

**Table 1:-** Fixed Effect Model Panel Data Regression.

D e p e n d e n t V a r i a b l e : L n _ Y ?				
M e t h o d : P o o l e d L e a s t S q u a r e s				
D a t e : 1 2 / 0 8 / 2 0 T i m e : 1 8 : 1 0				
S a m p l e : 2 0 1 4 2 0 1 9				
I n c l u d e d o b s e r v a t i o n s : 6				
C r o s s - s e c t i o n s i n c l u d e d : 7				
T o t a l p o o l ( b a l a n c e d ) o b s e r v a t i o n s : 4 2				
<b>V a r i a b l e</b>	<b>C o e f f i c i e n t</b>	<b>S t d . E r r o r</b>	<b>t - S t a t i s t i c</b>	<b>P r o b .</b>
C	0 . 5 0 6 9 0 1	1 . 4 8 1 8 5 6	0 . 3 4 2 0 7 2	0 . 7 3 4 6
L n _ X 1 ?	0 . 6 0 4 9 9 7	0 . 2 1 3 7 2 4	2 . 8 3 0 7 4 0	0 . 0 0 8 1
L n _ X 2 ?	0 . 1 2 8 8 9 7	0 . 0 6 0 4 6 4	2 . 1 3 1 8 1 4	0 . 0 4 1 1
L n _ X 3 ?	0 . 1 5 6 6 9 1	0 . 0 6 2 9 2 5	2 . 4 9 0 1 2 1	0 . 0 1 8 3

<b>L n _ X 4 ?</b>	0 . 1 9 8 0 9 0	0 . 0 5 1 9 1 0	3 . 8 1 6 0 2 4	<b>0 . 0 0 0 6</b>
Fixed Effects (Cross)				
	<b>E f f e c t s S p e c i f i c a t i o n</b>			
C r o s s - s e c t i o n f i x e d ( d u m m y v a r i a b l e s )				
R - s q u a r e d	0 . 8 8 3 6 2 2	F - s t a t i s t i c		2 3 . 5 3 7 2 3
<b>A d j u s t e d R - s q u a r e d</b>	<b>0 . 8 4 6 0 8 0</b>	<b>P r o b ( F - s t a t i s t i c )</b>		<b>0 . 0 0 0 0 0</b>
S . E . o f r e g r e s s i o n	0 . 0 6 7 8 7 4			

Source: Processing with Eviews.

Based on table 1 above obtained regression equations:

$$LnY_1 = 0.506901 + 0.604997LnX_1 + 0.128897LnX_2 + 0.156691LnX_3 + 0.198090LnX_4$$

The interpretation of the regression equation is:

1. Constant value = 0.506901 means that if all variables of ceteris paribus have a constant value, then the productivity value of pepper plantations is 0.506901.
2. The value of Koefisen Regression  $\beta_1 = 0.604997$ , meaning that the value of elasticity of planting area to the productivity of pepper plantations amounted to  $E = 0.604997$ . The value of  $\epsilon_p < 1$  indicates that the increase in planting area is inelastic to the productivity of pepper plantations. Elasticity ( $\epsilon_p$ )  $< 1$  indicates an inelastic condition decreasing return to scale. As a result of the Cobb-Douglas production function equation, the decreasing return to scale condition is that there is an increase in output smaller than the proportion of input increases ( $\epsilon_p < 1$ ), then the rate of return to scale decreases.
3. The value of Koefisen Regression  $\beta_2 = 0.128897$ , meaning that the value of elasticity of domestic investment to the productivity of pepper plantations amounted to  $\epsilon_p = 0.128897$ . The value of  $\epsilon_p < 1$  indicates that the increase in domestic investment is inelastic to the productivity of pepper plantations. Elasticity ( $\epsilon_p$ )  $< 1$  indicates an inelastic condition decreasing return to scale. As a result of the Cobb-Douglas production function equation, the condition of decreasing return to scale is that there is an increase in output smaller than the proportion of input increase ( $\epsilon_p < 1$ ), then the rate of return to scale decreases.
4. The value of Koefisen Regression  $\beta_3 = 0.156691$ , meaning that the value of elasticity of banking financing to the productivity of pepper plantations amounted to  $E = 0.156691$ . The value of  $\epsilon_p < 1$  indicates that the increase in banking financing is inelastic to the productivity of pepper plantations. Elasticity ( $\epsilon_p$ )  $< 1$  indicates an inelastic condition decreasing return to scale (the result of a smaller increase). As a result of the Cobb-Douglas production function equation, the condition of decreasing return to scale is that there is an increase in output smaller than the proportion of input increase ( $\epsilon_p < 1$ ), then the rate of return to the scale decreases.
5. Koefisen Regression value  $\beta_4 = 0.198090$ , meaning the elasticity value of Pepper Price to pepper plantation productivity is  $\epsilon_p = 0.198090$ . The value of  $\epsilon_p < 1$  indicates that the increase in Pepper Price is inelastic to the productivity of pepper plantations. Elasticity ( $\epsilon_p$ )  $< 1$  indicates an inelastic condition decreasing return to scale. As a result of the Cobb-Douglas production function equation, the condition of decreasing return to scale is that there is an increase in output smaller than the proportion of input increases ( $\epsilon_p < 1$ ), then the rate of return to scale decreases.

And based on table 1 above also obtained the form of a relationship that occurs partially between independent and dependent variabel. All variables show a positive and significant relationship. This shows that all variableS X to Vaiabel  $Y_1$  (pepper plantation productivity) are unidirectional (the increase of each variable X (1,2,3,4) gives an increase to the productivity of pepper plantations ( $y_1$ ) by the value of  $\beta$  of each variable X.

Simultaneously the influence of variable X with variable ( $Y_1$ ) is significant and positive. While the magnitude of the influence of variable X on  $Y_1$  (Pepper Plantation Productivity) was 84.61% and the rest was influenced by other variables that were not included in this study (15.39%).

**Models II:**

Model II explains the relationship between Lada Plantation Productivity ( $Y_1$ ) and Local Original Income ( $Y_2$ ). The best model selected based on the chow test and hausmantest is the fixed effect. The models are:

**Table 1:-Fixed Effect Model Panel Data Regression.**

D e p e n d e n t V a r i a b l e : L n _ Y 2 ?				
M e t h o d : P o o l e d L e a s t S q u a r e s				
D a t e : 1 0 / 1 7 / 2 0 T i m e : 1 1 : 1 8				
S a m p l e : 2 0 1 4 2 0 1 9				
I n c l u d e d o b s e r v a t i o n s : 6				
C r o s s - s e c t i o n s i n c l u d e d : 7				
T o t a l p o o l ( b a l a n c e d ) o b s e r v a t i o n s : 4 2				
<b>V a r i a b l e</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>P r o b .</b>
C	7,505617	1,281173	5,858395	0,0000
L n _ $\hat{Y}_1$ ?	1,457524	0,172554	8,446790	<b>0,0000</b>
Fixed Effects (Cross)				
<b>Effects Specification</b>				
C r o s s - s e c t i o n f i x e d ( d u m m y v a r i a b l e s )				
<b>R - s q u a r e d</b>	<b>0,924615</b>	<b>F - s t a t i s t i c</b>		59,57414
<b>Adjusted R - s q u a r e d</b>	0,909095	<b>Prob ( F - s t a t i s t i c )</b>		0,000000
<b>S . E . o f r e g r e s s i o n</b>	0,158260			

**Source:** Eviews Processing.

Model 2 Equation:

$$\ln Y_2 = 7.505617 + 1.457524 \hat{Y}_1$$

The interpretation of the regression equation is as follows:

1. Constant Value = 7.505617 means that if all  $Y_1$  (Pepper Plantation Productivity) ceteris paribus has a constant value, then the value of Regional Native Income is 7.505617.
2. The value of Koefisen Regression  $\beta_5 = 1.457524$ , meaning that the elasticity value of the productivity of lada plantations is facing the original income of the region of  $\epsilon_p = 1.457524$ . The value of  $\epsilon_p > 1$  indicates that the increased productivity of pepper plantations is elastic to the original income of the region. Elasticity ( $\epsilon_p$ )  $> 1$  indicates an elastic condition Increasing return to scale (greater increase). As a result of the Cobb-Douglas production function equation, the condition of increasing return to scale is that there is a greater increase in output and the proportion of increased inputs ( $\epsilon_p > 1$ ), then the rate of return to scale increases.

Based on Table 2 shows that the volume of pepper plantations has a significant and positive effect on the original income of the Bangka Belitung Islands Province. The magnitude of the influence of the productivity of pepper plantations on the original income of the region is indicated by the value of R-Squared = **0.924615**, meaning the large influence of pepper plantation productivity on the original income of the Bangka Belitung Islands Province area of **92.46** Percent, the remaining 7.54 percent was influenced by other factors outside the model studie

**Model III:**

The effect of Local Original Income on farmers' exchange rates in Bangka Belitung Islands Province, based on chow testing and hausman test obtained the best model is the fixed effect model. The fixed effect of the model can be seen in table 3 below:

**Table 3:-** Fixed Effect Model Panel Data Regression.

D e p e n d e n t   V a r i a b l e :   L n _ Z <sub>1</sub> ?				
M e t h o d :   P o o l e d   L e a s t   S q u a r e s				
D a t e :   1 0 / 1 8 / 2 0   T i m e :   4 : 4 1   P M				
S a m p l e :   2 0 1 4   2 0 1 9				
I n c l u d e d   o b s e r v a t i o n s :   6				
C r o s s - s e c t i o n s   i n c l u d e d :   7				
T o t a l   p o o l   ( b a l a n c e d )   o b s e r v a t i o n s :   4 2				
<b>V a r i a b l e</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>P r o b .</b>
C	6,890570	0,991484	6,949753	0,0000
L n _ $\hat{Y}_2$ ?	0,270371	0,033761	8,008488	<b>0,0000</b>
Fixed Effects (Cross)				
Effects Specification				
C r o s s - s e c t i o n   f i x e d   ( d u m m y   v a r i a b l e s )				
<b>R - s q u a r e d</b>	<b>0,706183</b>	<b>F - s t a t i s t i c</b>		<b>11,67403</b>
<b>A d j u s t e d   R - s q u a r e d</b>	<b>0,645691</b>	<b>P r o b ( F - s t a t i s t i c )</b>		<b>0,000000</b>
<b>S . E .   o f   r e g r e s s i o n</b>	<b>0,054840</b>			

**Source:** Eviews Processing.

Based on table 3 above, the regression equation obtained is as follows:

$$\text{LnZ}_1 = 6.890570 + 0.270371 \text{Ln}\hat{Y}_2$$

The interpretation of the regression equation is as follows:

1. Constant value = 6.890570 means that if all variables ceteris paribus has a constant value, then the farmer exchange rate is 6.890570.
2. The value of The Regression Coefisen  $\beta_6 = 0.270371$ , meaning that the elasticity value of the original income of the region against the farmer exchange rate of  $\epsilon_p = 0.270371$ . The value of  $\epsilon_p < 1$  indicates that the increase in the original income of the region is inelastic to the farmer's exchange rate. This kondisi is decreasing return to scale (the result of a smaller increase). As a result of the Cobb-Douglas production function equation, the condition of decreasing return to scale is that there is an increase in output smaller than the proportion of input increases ( $\epsilon_p < 1$ ), then the rate of return to scale decreases.

Based on Table 3, the statistical value of the original income of the region is 8.008488 with a probability value (P-value) of 0.0000. Thenative income of the region has a significant and positive effect on the exchange rate of farmers of Bangka Belitung Islands Province. The large influence of the original income of the region on the farmer exchange rate (FER) is indicated by the value of R-Squared = **0.706183**, meaning the large influence of the original income of the region on the farmer exchange rate (FER) in the Bangka Belitung Islands Province of **70.62** Percent, the remaining 29.38 percent was influenced by other factors outside the model studied.

### Conclusion:-

Based on the results of the analysis and study, the conclusions taken are as related: (1) Planting Area, Domestic investment, banking financing and pepper prices together have an effect significant on pepper plantation productivity, (2) Planted area has a significant effect on pepper plantation productivity means that with the wider planting of pepper plantations in Belitung with a planting system that is not simultaneously able to increase the productivity of pepper farming continuously. (3) Domestic investment has a significant effect on pepper plantation productivity means that in this case the Bangka Belitung government provides incentives in the form of ease of funding regulations ranging from fertilizer nurseries, medicines for farmers so that the productivity of pepper farmers can increase in Bangka Belitung. (4) Banking financing has a significant effect on pepper plantation productivity, meaning that inert Banking financing can dilute credit access for pepper farmers quickly so that farmers do not have difficulty in the financing of pepper productivity (5) Pepper prices have a significant effect on pepper plantation productivity means increase price will encourage and stimulate farmers' interest to develop opportunities by expanding land, and open new area to grow pepper so that the productivity of pepper plantations can increase. (6) The productivity of pepper production has a significant effect on Local Original Income, so the largest rakyat pepper plantation in Indonesia has an effect on the Original Income Local Area. And through the productivity of production of this competition is expected the level of regional capabilities in terms of finances is not always dependent on the central government. (7) Local Original Income has a significant effect on Farmer's Exchange Rate. It means Regional Original Income in the province of Bangka Belitung Islands with the pepper farming sector can improve the welfare of pepper farmers.

### Bibliography:-

1. Achmad Soediro, Inten Meutiab, Lilianac, 2017. The Effectiveness of Bank Financing to the Productivity of Agriculture Sector in South Sumatra. *Sriwijaya Journal of Management and Business* Vol.15 (3), 2017
2. Almasdi Syahza, Rosnita, Suwondo, Besri Nasrul, 2013. Potential Oil Palm Industry Development in Riau. *International Research Journal of Business Studies* vol. VI no. 02 (2013)
3. Ari Sudarman. 2013. *Microeconomic Theory*, issue 4, Yogyakarta: BPFE UGM.
4. Djaenuri, A. (2012). *Central Financial Relations – Regions*. Jakarta: Ghalia Indonesia
5. Hamdan, Sidik Priadana, Amri, 2018. Factors Affecting the Production of Pepper and the Implications for Farmers Income and Poverty Rate in Bangka Belitung Islands. *Conference Proceedings Jakarta Indonesia, ICABE 2018* pp. 61 – 72
6. I.B. Adeoye, A.E. Fashogbon, and B.A. Idris, 2014. Analysis of Technical Efficiency of Pepper Production Among Farmers Under Tropical Conditions. *International Journal of Vegetable Science*, 20:124–130, 2014
7. Indah Lestari Setiyowati, Sasongko, Iswan Noor, 2018. Farmer Exchange Rate and Agricultural Land Conversion Analysis to Agricultural Sector Poverty in Indonesia. *Journal of Economics and Development Studies*, 10 (1), 2018
8. I Putu Irvan, Ni Nyoman Yuliarmiti, 2019. Analysis of impact factors on farmers income. *International Research Journal of Management*, Vol. 6 No. 5: September 2019
9. Juliza Hidayati, Sukardi Sukardi, Ani Suryani, Anas Miftah Fauzi, Sugiharto Sugiharto, 2015. Optimization of Palm Oil Plantation Revitalization in North Sumatra Indonesia. *International Journal on Advanced Science, Engineering and Information Technology* Vol 5, No 6 (2015)
10. Karmawati, I K Ardana, Siswanto and D Soetopo, 2019. Factors effecting pepper production and quality in several production center. *International Conference on Sustainable Plantation (1st ICSP 2019)*.
11. Cashmere, 2013. *Banks and Other Financial Institutions*. Jakarta: Rajawali Pers
12. Lara Mustika, Fournita Agustina, Yudi Sapta Pranoto, 2019. Analysis of White Pepper Farming Financial Feasibility with Good Agricultural Practices (GAP) Method and Pepper Powder Business Feasibility in Bangka Belitung Islands Province. *Journal of Integrated Agribusiness*, Vol 1, No. 1,
13. Lili Salfina, Zaki, Meirinaldi, Sumarni and Elsy Meida Arief (2022), Determination Of Rice Prices To The Welfare Of Farmers In West Sumatra Province, *International Journal of Social Science And Human Research*, Volume 05 Issue 01, p. 25-32.
14. M. Hema, Ranjit Kumar and N.P. Singh, 2017. Volatile Price and Declining Profitability of Black Pepper in India: Disquieting Future. *Agricultural Economics Research Review* Vol. 20 January-June 2017 pp 61-76
15. Mediatani. 2015. How to Successfully Grow Pepper Easily. <http://mediatani.com/cara-sukses-menanam-lada/>.

16. Misharni, Yolanda, Marshal and Della Maretha (2022), Internal Influence of Villages, Village Economy and Village Allocation Funds on Poverty Levels in Pariaman City of West Sumatra Province, *Asian Journal of Social Science and Management Technology*, Volume 4, Issue 2, p. 30-38.
17. Mubyarto. 2011. *Introduction to Agricultural Economics*. Jakarta: LP3ES.
18. Noor, F. A., Ratno, A., & Dessy, N. F. (2019). The effect of regional original income and balance funding on regional government financial performance. *Journal of Islamic Accounting and Finance Research*, 1(1), 25-46. <https://doi.org/10.21580/jiafr.2019.1.1.3745>
19. Pablo Pacheco Sophia Gnych Ahmad Dermawan Heru Komarudin Beni Okarda, 2017. The palm oil global value chain Implications for economic growth and social and environmental sustainability. Center for International Forestry Research (CIFOR) Working Paper 220
20. Ponniah Sivarajah, Randima Wickramasinghe, 2016. Impact Of Land Size On Productivity, Income And Profits From Pepper Cultivation In Sri Lanka. *AGROFOR International Journal*, Vol. 1, Issue No. 3, 2016
21. Rahman, 2016. The Influence Of Regional Original Income (Pad) On The Human Development Index (Ipm) In Jeneponto Regency (Islamic Economic Perspective). *International Journal of Current Research* Vol 10, Issue, 02, pp 20388-20391, September, 2016
22. Rusli Anwar, Sopan R.P Sitorus, Anas Miftah Fauzi Widiatmaka, Machfud, 2014. Technical Culture And Productivity Of Oil Palm In Several Plantations In East
23. Samuelson, Paul A and Nordhaus, 2014. *Macroeconomics*. Greta Theresa Translator
24. Syofria Meidona, Yolanda, Sumarni, Elsy Meida Arif, Della Maretha & Heru Subiyantoro (2021), The Factor Determinants of Regional Original Revenue in West Sumatra Province, *International Journal of Applied Science*; Vol. 4, No. 3, p. 1-10.
25. Taufik Akbar, Muhammad Fauzi, Hairin Fajeri, 2019. Affecting Factors Farmer Exchange Rate (NTP) of Food Crops South Kalimantan Province. *Journal of Agriculture and Veterinary Science (IOSR-JAVS)*, e-ISSN: 2319-2380, p-ISSN: 2319-2372. Volume 12, Issue 7 Ser. I (July 2019), PP 83-91
26. Usman, U. & Juliyani (2018). Influence of Land Area, Fertilizer, and Labor Amount on Rice Production Gampong Matang Baloi, *Unimal Agricultural Economics Journal*, 1 (1), 31-39
27. Yudiyanto Yudiyanto, Akhmad Rizali, Abdul Munif, Dede Setiadi, Ibnu Qayim, 2014. Environmental Factors Affecting Productivity Of Two Indonesian Varieties Of Black Pepper (*Piper Nigrum L.*). *Agrivita Journal of Agricultural Science* Volume 36 No. 3 2014
28. Yuhono, J.T. 2007. Lada Agribusiness System and Its Development Strategy. *Litbang Agriculture*. 26 (2). P7.