

## **The Influence of Capital and Labor Factors on Coffee Production In The Regency of Pesisir Selatan, West Sumatra Province**

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**Abstrak.** Kopi sebagai komoditi unggulan di Kabupaten Pesisir Selatan belum mampu memberikan nilai ekonomi yang tinggi bagi masyarakat. Hal ini disebabkan karena produksi kopi yang mengalami penurunan selama periode tahun 2016-2020. Sehingga sebagai upaya perbaikan perlu dilakukan optimasi faktor produksi agar dapat memaksimalkan produksi. Penelitian ini bertujuan untuk menganalisis faktor yang mempengaruhi produksi kopi di Kabupaten Pesisir Selatan. Penelitian ini menggunakan data primer yang dianalisis secara deskriptif kuantitatif menggunakan fungsi produksi Cobb-Douglas dan metode pengolahan regresi linier berganda (OLS) terhadap 113 responden yang diambil secara *purposive sampling*. Variabel modal dan tenaga kerja akan dianalisis untuk melihat pengaruhnya terhadap produksi kopi. Berdasarkan hasil penelitian didapatkan bahwa secara parsial variabel modal berpengaruh signifikan terhadap jumlah produksi kopi, sedangkan variabel tenaga kerja tidak berpengaruh signifikan. Namun secara bersama-sama variabel modal dan tenaga kerja berpengaruh terhadap produksi kopi yang dihasilkan di Kabupaten Pesisir Selatan.

**Kata kunci:** modal; tenaga kerja; kopi

**Abstract.** Coffee has been a leading commodity in Pesisir Selatan Regency however it has not been able to provide high economic value for the community. This is due to coffee production which has decreased during the 2016-2020 period. So as an effort to improve, it is necessary to optimize production factors in order to maximize production. This study aims to analyze the factors that influence coffee production in Pesisir Selatan Regency. This study uses primary data which was analyzed descriptively quantitatively using the Cobb-Douglas production function and multiple linear regression (OLS) processing methods for 113 respondents who were taken by *purposive sampling*. The variables of capital and labor will be analyzed to see their effect on coffee production. Based on the results of the study, it was found that partially the capital variable had a significant effect on the amount of coffee production, while the labor variable had no significant effect. But together the variables of capital and labor affect the coffee production produced in Pesisir Selatan Regency.

**Keywords:** capital; coffee; labor

### **INTRODUCTION**

Regions in Indonesia still typically rely on the agricultural sector as a buffer for the regional economy, therefore the growth of the agricultural sector is a strategic policy in the development of the national economy (Aulia, 2017). Even during the Covid-19 outbreak in Indonesia, the agriculture industry had emerged as the country's economic savior (Sunaraya et al., 2021). The sectors of agriculture, forestry, and fisheries are among with good growth (BPS Indonesia, 2021). In order to lower production costs, boost production and productivity, and raise the profits and incomes of farmers as agricultural business actors, agricultural growth must be centered on superior commodities. The viability of the agroecosystem must still be taken into account when developing superior commodities in order to increase productivity and selling value so that it can provide added value for farmers (Hayati et al., 2017). The regency of Pesisir Selatan In West Sumatra Province is one of the regions whose economy still heavily relies on the agricultural, forestry and fishery sectors. The contribution of the agricultural sector reached 37% of the Gross Regional Domestic Income (GRDP) of Pesisir Selatan Regency (BPS Kabupaten Pesisir Selatan, 2020). The agricultural sector as a supporter of the community's economy in Pesisir Selatan Regency must receive serious attention so that it can be a solution for improving regional economic growth .

One of the leading commodities that need to be developed in the Pesisir Selatan Regency is coffee. This commodity is stated in the regional medium-term development plan (RPJMD) for the period of 2016-2021 in Pesisir Selatan Regency (Pemerintah Kabupaten Pesisir Selatan, 2021). The contribution of coffee produced by Pesisir Selatan Regency to the coffee production of West Sumatra Province as a whole is 13% and West Sumatra contributes 2.5% to national coffee production (BPS Provinsi Sumatera Barat, 2020). Coffee is also one of the commodities that is of national concern, as Indonesia is one of the largest coffee producers in the world with a contribution of 7.13% to the total world coffee production (Pusat Data dan Sistem Informasi Pertanian, 2020).

As a leading commodity, coffee in Pesisir Selatan Regency has not been able to provide high economic value and does not produce added value for farmers because farmers only sell their products in the form of coffee beans for

IDR 22.000 per kg while if it is processed into ground coffee, the price is of IDR 70.000 per kg (Dinas Tanaman Pangan Hortikultura dan Perkebunan, 2020). Based on record, Pesisir Selatan Regency in 2020, only around 74,15 Tons of ground coffee were produced or about 3.25% of the number of coffee beans produced by farmers in Pesisir Selatan Regency (Dinas Koperasi Perindustrian dan Perdagangan, 2020). From these problems, obstacles or factors that cause farmers not to carry out post-harvest processing of coffee in Pesisir Selatan Regency can be identified. As a leading commodity, coffee in Pesisir Selatan Regency has not been able to provide high economic value for the community because the production of coffee beans produced by farmers has decreased during the 2016-2020 period (BPS Kabupaten Pesisir Selatan, 2020). So as an effort to improve, it is necessary to optimize production factors in order to maximize production.

Production optimization can occur if farmers can manage their resources or production factors properly (Fatma, 2011). Coffee cultivation carried out in Pesisir Selatan Regency is still in the form of smallholder plantations (Distanhortbun Kabupaten Pesisir Selatan, 2020). The condition of smallholder plantations is usually identical to the management of coffee cultivation which is simple and less intensive, the application of low technology, the use of small business capital, plant maintenance, especially in the selection of plant seeds and the use of fertilizers that are not good and the number of workers used is not optimal (Thamrin, 2014). Factors that affect coffee production include productivity, capital, labor, plant age, and use of fertilizers that are positively and significantly related to coffee production, while farming experience has a negative relationship with coffee production (Putri et al., 2018). The factor of land area, the amount of manure, and the use of labor have a significant effect on coffee production, while land area and NPK fertilizer do not affect the amount of coffee production produced (Isyariansyah et al., 2018). Financial factors, government policies, and human and physical resource factors affect coffee production (Gathura, 2013). Capital factors, land area, and production costs influence coffee production, while social and technological factors do not affect coffee production (Yulanda, 2019). The purpose of this study was to analyze the factors that affect coffee production. Analysis of factors that affect production is carried out to find out how much influence each factor has on production so that later it can be optimized production by managing production factors optimally.

## METHOD

This research was conducted from September to December 2021 in Pesisir Selatan Regency. The research location was taken purposively with the consideration that Pesisir Selatan Regency is one of the centers of coffee production in West Sumatra Province and it is a leading commodity being developed in this Regency. This research was carried out using a survey method, namely by describing a numerical description of the tendencies, attitudes and opinions of a particular population by examining a sample of that population (Creswell, 2016). The sample in the study was determined by purposive sampling, namely the sampling method using certain criteria selected by the researcher (Sugiyono, 2019). The criteria for farmers to be sampled are coffee farmers who are members of farmer groups with legal entities, with a total of 113 farmers from 16 farmer groups. The data used are primary data and secondary data. Primary data were obtained through interviews with sample farmers meanwhile, secondary data was obtained from the Department of Food Crops, Horticulture and Plantation, of Pesisir Selatan Regency and various other sources. The method used in data processing in this study is a qualitative method which is a research method based on the philosophy of postpositivism which is used to examine natural objects where the researcher is the key instrument (Sugiyono, 2019).

The method used in data processing in this study is a quantitative method. The quantitative method is a research method based on concrete data, research data in the form of numbers that will be measured using statistics as a calculation test tool, related to the problem being studied to produce a conclusion (Sugiyono, 2019). In analyzing the factors that influence coffee production, quantitatively the Cobb-Douglas production function is poured into a multiple linear regression model and processed using the *Statistical Package for the Social Sciences* (SPSS) program. The Cobb-douglass production function can be written into a multiple linear regression model with the following equation:  $Y = \beta_0 X_1^{\beta_1} X_2^{\beta_2}$ . Then the equation transformation is carried out in the form of a logarithmic equation, so the equation is estimated:  $\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + e$ . Description : Y : Coffee Production (kilograms);  $X_1$  : Capital (Rupiah);  $X_2$  : Labor (person); e : Constant;  $\beta_1, \beta_2$  : Factor regression coefficient  $X_1$  &  $X_2$

To get good regression results, it is necessary to test the classical assumption consisting of a normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. After fulfilling all classical assumption tests, the next step is to test multiple linear regression analysis consisting of the coefficient of determination test, F test (simultaneously), and t-test (partially) (Ghozali, 2014). The hypotheses for the analysis of factors that affect coffee production are: (1)  $H_1$ : Capital variable affects coffee production;  $H_2$ : Labor variable affects coffee production; and  $H_3$ : The variables of capital and labor together have an effect on coffee production in Pesisir Selatan Regency

## RESULT

**Table 1**  
**Sample Characteristics**

No	Details	Number of Samples (Person)	Percentage (%)
1	Gender		
	▪ Men	87	76.99
	▪ Women	26	23.01
2	Age		
	▪ 21 – 50 Years	71	62.83
	▪ > 50 Years	42	37.17
3	Education		
	▪ ≤ 12 Years	85	75.22
	▪ > 12 Years	28	24.78
4	Experience as Coffee Farmer		
	▪ 1 – 5 Years	55	48.67
	▪ > 5 Years	58	51.33

Source: data process

The samples in this study were dominated by men with a percentage of 76.99%. Most sample farmers are in the age range of 21-50 years, with a percentage of 62.83%. In terms of education level, the sample farmers went to school for 12 years or have graduated from Senior high school as many as 75.22% therefore it can be seen that most of the farmers have completed basic education. From a business experience point of view, 51.33% of sample farmers already have experience in coffee cultivation for > 5 years.

**Table 2**  
**Results of Regression Analysis**

Variable	coefficient	t_statistics	Sig.
Constant	-1.878		
Capital (X <sub>1</sub> )	0.548	11.939	0.000
Labor (X <sub>2</sub> )	0.003	0.133	0.894
R Square	0.739		
Fhit	155.968		
Sig.	0.000		

Source: data process

Based on the results of the analysis of the Cobb-Douglas function, the regression equation is obtained:  $\ln Y = -1.878 + 0.548 \ln X_1 + 0.003 \ln X_2 + e$

- a. Capital variable (X<sub>1</sub>). Hypothesis H<sub>1</sub> is accepted, because t arithmetic = 11.939 > t table = 1.65870 and a significance value of 0.000 < 0.05. This shows that capital affects coffee production, which means that the higher the capital owned by farmers, the higher the amount of coffee produced in the Pesisir Selatan Regency. The capital variable has a significant effect on the number of products produced, which means that additional capital will be able to increase the amount of production (Putri et al., 2018). The capital variable has a positive effect on the amount of Arabica coffee production in the Kintamani District (Dewi, & Yuliarmi, 2017). The capital factor has a positive and significant effect on Arabica coffee production in the South Sulawesi (Yordy, 2017).
- b. Labor Variable (X<sub>2</sub>). In the study, it was found that the labor variable did not affect the amount of coffee production because the value of t count = 0,133 < t table = 1.65870 and a significance value of 0.894 > 0.05 so that the hypothesis H<sub>2</sub> was rejected. This happens because the number of workers used in doing coffee farming is only about 2 people, the workforce also comes from workers in the family and the average workforce used has never received training and counseling on how to cultivate coffee so it is not effective and efficient for production optimization. According to Ardiansah et al. (2014), the labor variable has no effect on coffee farming production because coffee farming does not use much labor in its management. grow other crops on the same land. One of the causes of the labor variable not having a significant effect on coffee production is because most of the labor used in coffee cultivation is for the harvesting process, not for the maintenance of coffee plants.

- c. Simultaneously. Hypothesis  $H_3$  is accepted, because  $F \text{ count} = 155.968 > F \text{ table} = 3.08$  and significance, value of  $0.000 < 0.05$ . This shows that the variables of capital and labor simultaneously affect to coffee production in Pesisir Selatan Regency.
- d. The Coefficient of Determination ( $R_2$ ). The value of the coefficient of determination obtained is 0.739. This means that the amount of coffee production can be explained by the variables of capital and labor of 73.9% or the independent variable of capital and labor can affect production by 73.9%. Meanwhile, the remaining 26.1% is influenced by other variables not explained in this study. If the value of the coefficient of determination obtained is greater than 50%, it means that the variables built in the study are very influential (Soviandre et al., 2014).

Based on the results of the analysis of factors that affect coffee production in Pesisir Selatan Regency, policy recommendations that can be given to the South Coastal Regency government are: (1) Maximizing the function of farmer groups as organizations in developing farmer knowledge for the adoption of new technology; (2) Conducting regular training and counseling to farmers and farmer groups. regarding cultivation methods that are in accordance with the recommendations; and (3) Facilitating farmers to obtain capital assistance from formal institutions or related agencies.

## CONCLUSION

From the results of the study, it was found that together the variables of capital and labor, affected coffee production. However, partially the variables of capital affect coffee production, while the variables of labor do not affect coffee production. Therefore, policies that can be carried out for the development of coffee as important commodities in Pesisir Selatan Regency are : Maximizing the function of farmer groups as organizations in developing farmer knowledge for the adoption of new technology, Conducting regular training and counseling to farmers and farmer groups. regarding cultivation methods that are in accordance with the recommendations and facilitating farmers to obtain capital assistance from formal institutions or related agencies.

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