

Analysis of Production Factors in Lanting Kuning Business

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Abstract. This study examines the use of production factors in *lanting kuning* (food made from cassava, shaped like a small circle, and fried to dry like chips) producers in Sumpiuh District, Banyumas Regency. Researchers are interested in conducting research on *lanting kuning* because the number of producers decreases almost in every year. This study has the following research questions. First, how the influence of the production factors used such as capital, raw materials, and labor on the number of *lanting kuning* production. Second, how is the level of efficiency of the use of these production factors. The purpose of this study is to analyze the effect of capital, raw materials, and labor on the number of *lanting kuning* production, and analyze the level of efficiency of production factors based on the returns to scale. The research method used is a survey. Determination of the number of samples using the Slovin formula, found as many as 14 *lanting kuning* producers as respondents. Estimation of the Cobb-Douglas production function coefficient using multiple linear regression. The results showed that capital, raw materials, and labor had a positive and significant effect on the number of *lanting kuning* production. The level of efficiency is in decreasing return to scale, which means that increasing the use of all factors of production will be greater than the increase in the number of *lanting kuning* production. The implication is that the government provides support to micro and small businesses in the form of encouraging banks to provide a portion of working capital loans with interest and conditions that are easily fulfilled by producers. Local governments can help from upstream to downstream, for example, conduct training on how to work with cassava farmers to ensure the availability of raw materials for making *lanting kuning*, conduct training to improve skills to make food products that are safe for consumption and halal, and teach how to expand the marketing of production.

Keywords: 1 Cassava · 2 Capital · 3 Raw materials · 4 Labor · 5 Total production.

1. INTRODUCTION

Micro, Small, and Medium Enterprises or MSMEs have an important role in the economy of a country (Kyaw, 2008 and Todorut, 2013). Its roles include reducing unemployment, contributing and encouraging an increase in a country's gross domestic product (GDP) and driving the economy (Szwacka and Mokrzycka, 2013). In industrialized countries, MSMEs are an important part of driving the economy because many large industries are dependent on MSMEs. Large industries can move because of vertical integration with MSMEs so that MSMEs is the key driver of the economy (Talebi, et al, 2013). In developing countries, the role of MSMEs is more focused on alleviating various economic and social problems, such as poverty, unemployment, and income equity (Kyaw, 2008; and Egers, 2010)..

In Indonesia, one of the important roles of MSMEs for the economy can be seen from its contribution to employment and the formation of GDP (www.depkop.go.id). According to data

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from the Ministry of Cooperatives and MSMEs (2019) the number of MSMEs in 2016 was 61,651,177 units and could absorb employment of 112,828,610 people, and in 2017 MSMEs numbered 62,922,617 units and absorbed employment of 116,673,416 people . Large businesses only amount to 5,370 units in 2016 and 5,460 in 2017, with a total employment of 3,444,746 people in 2016 and as many as 3,586,769 people in 2017. From the data it is known that the number and absorption of labor in MSMEs exceeding large companies.

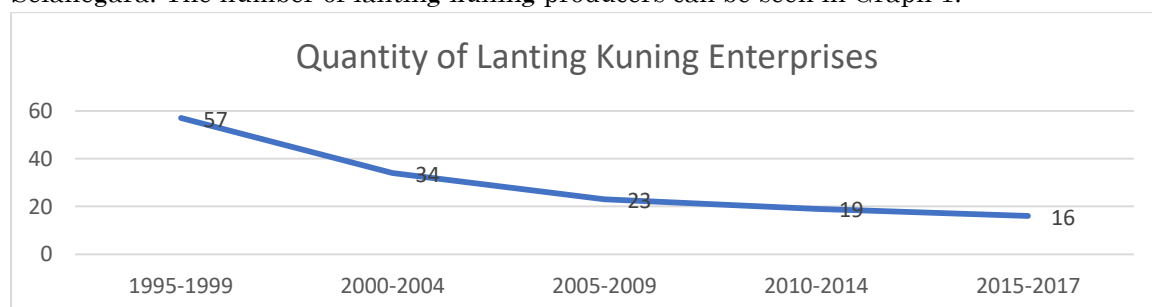
Based on these data, it can be seen that the role of MSMEs in driving the Indonesian economy is very important, so the government seeks to develop MSMEs. This has an impact on the growing number of entrepreneurs in Indonesia. Based on data from the Central Statistics Agency or *Badan Pusat Statistik* (BPS) in 2013, the number of Indonesian entrepreneurs increased by 1.63 percent, compared to 2012 with a total of 56.5 million entrepreneurs. The increase in the number of entrepreneurs is 58.51 percent in the Central Java region, which is the region that has the most dominant growth compared to other provinces (www.suaramerdeka.com).

Based on the development of MSMEs in Central Java Province, Banyumas Regency is one of the districts that has a proud development of MSMEs. The number of MSMEs in Banyumas Regency increased from 2011 to 2013. In 2011 MSMEs in Banyumas Regency amounted to 172,239 units, becoming 172,633 units in 2013 (Central Java Cooperative and MSME Service, 2014).

The Banyumas community established MSMEs in various types such as batik, food, handicrafts. The total number of businesses in the Banyumas MSMEs is 160 types of business, and 100 MSMEs are among those involved in snacking and packaging drinks. The remaining 60 MSMEs are in the form of batik products and handicrafts. According to Adhawiyah (2013), the majority of MSMEs in Banyumas Regency are MSMEs that do business in the processing of Banyumas typical snacks such as *kripik tempe*, *nopia*, *lanting*, and *getuk goreng*.

Based on the results of research by Sukiman, Dewi, and Priyono (2014), Sumpiuh Subdistrict is one of the sub-districts in Banyumas Regency which is classified as poor, therefore efforts are needed to improve the economic activities of its people so that people's welfare increases. One of the economic potentials that can be developed in the Sumpiuh District is MSMEs. Sumpiuh has many products which are scattered in various villages, but the original and typical product is *lanting kuning*. At present, the number of producers of *lanting kuning* continues to decline, so it is feared that *lanting kuning* products will disappear in the market.

Based on the results of the interview with Mujiono, a producer of the *lanting kuning*, from year to year the quantity of *lanting kuning* producer has decreased. In 2017, only 16 units remaining, there are 14 business units in the villages of Kuntili and 2 business unit in the village of Selanegara. The number of *lanting kuning* producers can be seen in Graph 1.



Source: Pre Survey, 2017

Graph 1. Quantity of Lanting Kuning Enterprises

According to Arifin (2008), Ihua (2009), Bowen (2009), and Adhawiyah (2013), the problems that MSMEs have are the availability of raw materials, capital and skills. This has an effect on the production behavior of SMEs in maximizing their income. Production behavior is related to business feasibility, production function and level of business efficiency. According to Dwi (2006), each production process has a technical foundation which in economic theory is called a production function. The production function is an equation that shows the relationship between physical production (output) and production factors (Mubyarto, 1995). Production factors include land, capital, labor, and skills.

Based on the use of input and output produced, it can be seen the level of economic efficiency. Given that the *lanting kuning* producers in Sumpiuh uses traditional production techniques that are considered to be less efficient. In addition, many entrepreneurs use traditional methods, using production inputs such as firewood and family labor that are not taken into account in production costs. This has an impact on the feasibility of the business that has been carried out and the level of efficiency has not reflected the actual situation. Based on this background, this research needs to be done.

2. MATERIAL AND METHODS

2.1 Research Data

This research used primary data. Primary data was obtained from direct interview with producers of *lanting kuning* in Kuntili Village and Selanegara Village. Both are in the Sumpiuh District area. The number of *lanting kuning* producers is 16, using the Slovin formula and $\alpha = 10$ percent, found the number of samples is 14. The sampling technique used is simple random sampling, each producer has the same opportunity to be taken as a respondent. Random sampling is done using Microsoft Excel. Furthermore, the questionnaire contents will be tabulated and analyzed using the Cobb Douglas production function model.

2.2 Analysis Method

The analysis method used in this research is the Cobb Douglas production function model. Mathematically the production function is defined as the relationship between input (factor of production) and output, so that it can be written as follows (Soekartawi, 2003):

$$Y = f(X_1, X_2, X_3, \dots, X_n) \dots \dots \dots (1)$$

Based on equation (1), Cobb Douglas production function can be written as follows:

$$Y = aX_1^{b_1} X_2^{b_2} X_3^{b_3} \dots X_n^{b_n} e^u \dots \dots \dots (2)$$

$$\text{Logarithm from equation (2): } \ln Y = \ln a + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + e \dots \dots \dots (3)$$

Information:

Y = *lanting kuning* production

X₁ = capital

X₂ = raw material

X₃ = labor

a = constanta

b₁, ..., b_n = coefficient

e = *disturbance term*

The dependent variable used in this research is the *lanting kuning* production. The independent variables are capital, raw material, and labor. The operational definition of each variables are as follows:

a) Production of *lanting kuning* is the total production produced by *lanting kuning* producers seen from the production in one production (in kilogram or kg).

b) Raw materials

The raw material referred to in this research is the raw material of SME *lanting kuning* is cassava, seasoning, etc in once production and calculated in Rupiah.

c) Labor is the number of employment of *lanting kuning* (in person).

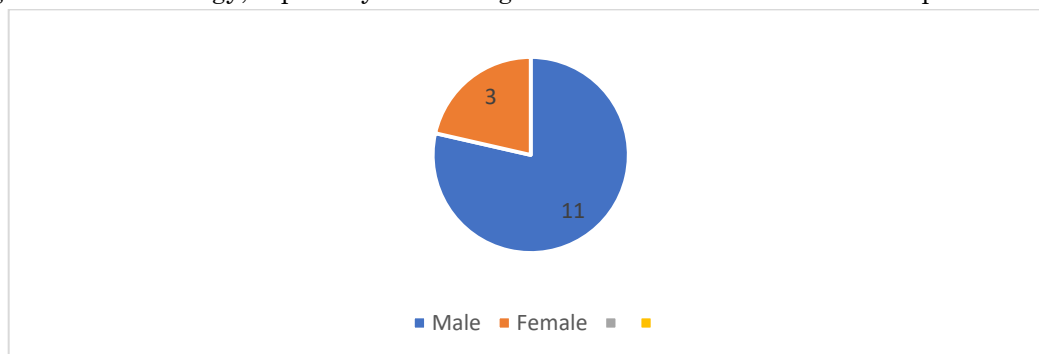
d) Capital is money needed as initial capital in carrying out production activities (in Rupiah).

Furthermore, all variables in the Cobb Douglas production function are transformed in the form of natural logarithms so that they can be estimated using multiple linear regression.

3. RESULT AND DISCUSSION

3.1 Profile of Lanting Kuning Producer in Sumpiuh Sub-district

Profile of *lanting kuning* producers seen from gender, age, education level, and business duration. The first profile is seen in terms of gender. The results of the tabulation show that the majority of the *lanting kuning* producers are male because the making of *lanting kuning* requires a large amount of energy, especially in refining cassava. This can be seen in Graph 2.



Source: Primary Data, 2018

The second profile is seen in terms of age. Age is associated with one's productivity, especially if the job requires a lot of work forces. Based on age, the majority of respondents are in productive age. The respondents who are in productive age are 85.72 percent. This can be seen in Table 1.

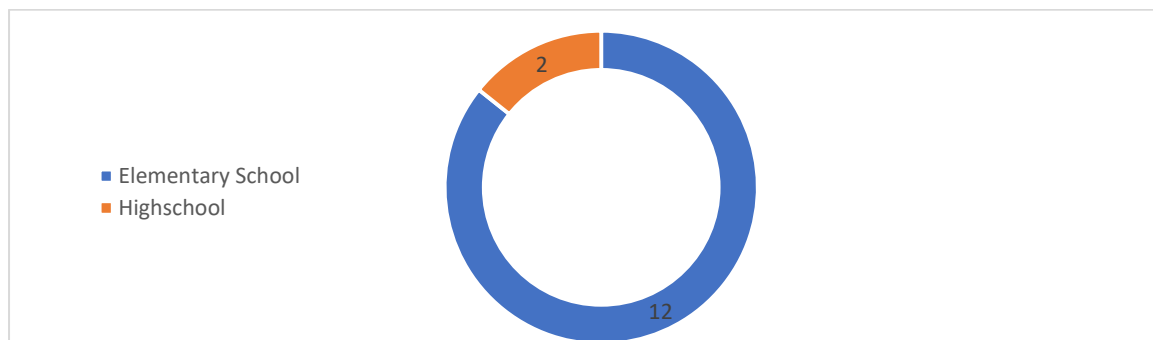
Table 1. Profile of Respondents by Age

Age Group	Amount	Percentage
42-47	1	7,14
48-53	2	14,29
54-59	6	42,86
60-65	3	21,43
66-71	2	14,28

Source: Primary Data, 2018

The age of respondents included in the productive age allows the respondents to work better compared to respondents at the age over 65 years. The respondents at the age over 65 years are included in unproductive age.

Furthermore, the profile of respondents is seen from the education level. Education level indicates formal education taken by the respondents. In general, a person's education level may affect the ability to run a business, such as managerial skills, the ability to obtain information and new knowledge from outside which is useful to develop the business. In general, the education level of *lanting kuning* producers is low. Graph 3 shows the profile of respondents by education level.



Source: Primary Data, 2018

Based on Graph 3, it can be determined that the education level of respondents is still relatively low 85.71% of respondents do not go to high school. Working as *lanting kuning* producer does not prioritize formal education, skills are preferred. Skills can be gained by training.

Further, the profile of respondents is seen from the business duration that has been run by the respondents. In average, the business has been running for 19 years, the shortest business duration is three years and the longest one is 47 years. Table 3 shows the profile of respondents by business duration.

Table 3. Characteristics of Respondents by Business Duration

Business Duration	Amount	Percentage
1 – 10	2	14.29
11 – 20	5	35.71
21 – 30	2	14.29
31 – 40	3	21.42
41 – 50	2	14.29

Source: Primary Data, 2018

Table 3 shows that there are two respondents with business duration of above 40 years. They continue the business that was previously done by their parents. It is not easy to open *lanting kuning* business, this provides advantages for business owner, such as the ability to survive the business.

3.2 Result of Reseach

The variable used as the dependent variable is the amount of production in one month, and the variables used as independent variables, namely capital, raw materials, and labor.

Mathematically can be expressed in the equation as follows: $Y = aX_1^{b_1}X_2^{b_2}X_3^{b_3} \dots X_n^{b_n}e^u$ or transform into natural logarithm as follows:

$$\ln Y = \ln a + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + u$$

Estimation results using multiple linear regression as follows:

$$\ln Y = \ln 3.72 + 0.47 \ln X_1 + 0.14 \ln X_2 + 0.03 X_3 + u$$

After the regression results are obtained in linear form, then the equation is returned to the original (non-linear) form as follows:

$$Y = 1.31 X_1^{0.47} X_2^{0.14} X_3^{0.03} e^u$$

The capital variable has a regression coefficient (b_1) of 0.47, meaning that for every 1 percent increase in capital input, *lanting kuning* production will increase by 0.47 percent, assuming that the other independent variables remain. The raw material variable has a regression coefficient (b_2) of 0.14, meaning that for every 1 percent increase in raw material input, *lanting kuning* production will increase by 0.14 percent, assuming that the other independent variables remain. Labor variable has a regression coefficient (b_3) of 0.03, meaning that for every addition of 1 percent of labor input, *lanting kuning* production will increase by 0.03 percent.

After knowing the regression coefficient on the Cobb Douglas model, we can then measure the scale of production in the yellow *lanting kuning* business. The scale of production is needed to determine whether this business is in a condition of increasing, decreasing, or constant return to scale. If the coefficient of $b_1 + b_2 + b_3 > 1$ means that the *lanting kuning* business is in a condition of increasing return to scale, that is, if there is an additional input of 1 percent, the output will increase by more than 1 percent. If the coefficient of $b_1 + b_2 + b_3 < 1$ means that the *lanting kuning* business is in a decreasing return to scale condition, ie if there is an additional input of 1 percent it will only make the output increase by less than 1 percent. If the coefficient of $b_1 + b_2 + b_3 = 1$ means that the *lanting kuning* business is in a constant return to scale condition, ie if there is an additional input of 1 percent it will only make the output increase by 1 percent.

Based on the regression results, it is known that b_1 is 0.47, b_2 is 0.14, and b_3 is 0.03, then $b_1 + b_2 + b_3$ is 0.64, meaning the *lanting kuning* business has a return to scale < 1 or decreasing return to scale, ie if there is an additional input of 1 percent of output will increase by less than 1 percent. The use of inputs that are not yet efficient is caused by *the first*, the yellow *lanting kuning* producers do not have high education so that their mindset is still traditional. This can be seen from the lack of innovation in the making of yellow *lanting kuning* from the past until now. *Second*, the duration of the business also does not guarantee production can increase because based on interviews with respondents it is known that the yellow *lanting kuning* business requires perseverance that is usually owned by parents while the next generation prefers jobs that are more practical and faster to make money.

4. CONCLUSION

The results showed that capital, raw materials, and labor had a positive and significant effect on the number of *lanting kuning* production. The level of efficiency is in decreasing return to scale, which means that increasing the use of all factors of production will be greater than the increase in the number of *lanting kuning* production.

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