

The Effect of Capital, Labor and Raw Materials on the Production of Batik MSMEs in Pamekasan Regency (Study in Proppo District)

Kinnatus Zahrah^{1*}, Yufita Listiana²

^{1,2} Department of Economics, Universitas Trunojoyo Madura, Bangkalan, Indonesia

Email: zahrohkinnatus@gmail.com

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ABSTRACT

Production is very important in an industry, so it requires constant planning and supervision. By paying attention to the factors that affect production, it will make it easier to run an industry. The purpose of this study was to analyze the effect of capital, labor and raw materials on the production of batik MSMEs in Proppo District, Pamekasan Regency. The research method used is descriptive with a quantitative approach. The sampling technique with non-probability sampling in this study used purposive sampling. The number of samples used in this study amounted to 98 respondents who were determined using the slovin formula. The data analysis technique used is multiple linear regression models with Stata software version 14. The results of this study are that capital has a negative and significant effect on the production of batik MSMEs in Proppo District. Labor and raw materials have a positive and significant effect on the production of batik MSMEs in Proppo District. Capital, labor, and raw materials together have a positive and significant effect on the production of batik MSMEs in Proppo District.

Keywords: Capital, Labor, Raw Materials, Production and Batik MSMEs

INTRODUCTION

Batik is one of the Micro, Small and Medium Enterprises (MSMEs) that also plays an important role in the national economy. Currently, Indonesia is very aggressively running MSMEs in various regions. In addition to playing a role in the national economy, MSMEs also play a role as a labor absorber in the community regardless of the high level of education of its workforce (Mandasari *et al.*, 2019). The development of MSMEs such as handmade batik crafts is also able to encourage poverty alleviation programs. also has an important role in increasing income equality and as an export driver and source of investment for the local area (Suharwati, 2019). One of the areas in East Java that has great potential in the batik craft sector is Madura (Rakhmawati, 2016).

Madura is known as one of the popular batik centers commonly referred to as "Madura Batik". Bangkalan, Sampang, Pamekasan, and Sumenep are districts in Madura that have a batik industry with different characteristics, namely the use of bold/contrasting colors. Based on data from the Department of Industry and Trade (Disperindag) in 2022, the number of batik micro businesses in Bangkalan Regency was 220 units, Sampang Regency was 60 units, Pamekasan Regency was 270 units, and Sumenep Regency was 150 units (Damayanti & Zakik, 2023). Based on this data, it can be seen that Pamekasan District

is the district with the most batik business unit commodities compared to the other three districts in Madura.

The batik craft center in Proppo sub-district is the center of hand-written batik craft in Pamekasan with the largest population of craftsmen. This is in line with research (Mamdudah *et al.*, 2022) which states that Proppo Sub-district is a sub-district that has the most batik business units compared to other sub-districts in Pamekasan Regency. There are 3 villages that have the most batik business units, namely, Klampar, Candi Burung and Toket. The following data is presented in the form of a table of the distribution of Pamekasan batik centers, according to data recorded by the Department of Industry and Trade of Pamekasan Regency in 2023.

Table 1 Distribution of Batik Centers in Pamekasan

No.	District	Number of centers
1	Tlanakan	4
2	Proppo	129
3	Pagantenan	16
4	Pamekasan	44
5	Pademawu	2
6	Ban	16
7	Palenggaan	68
8	Kadur	17
9	Galis	10
Number		306

Source: Department of Industry and Trade of Pamekasan Regency, 2023 The strongest reason for the researcher to take Proppo Sub-district as an object

The research conducted because the sub-district is the largest batik center in Pamekasan Regency with a total 129 business units.

Production is one of the fundamental elements in business activities, especially for Micro, Small and Medium Enterprises (MSMEs). The production process not only reflects the ability of businesses to produce goods or services, but it is also an indicator of business efficiency and competitiveness. In the Batik MSME sector, production has a strategic role in meeting market demand while maintaining business sustainability. According to production theory, several factors can affect the production level of batik MSMEs, including capital, labor and raw materials for the product.

Capital is money or goods used to run a business (Ferayani & Widayanti, 2023). Capital is an important foundation that allows MSMEs to grow and develop. For a Micro, Small and Medium Enterprise (MSME), the form of capital in the research is in the form of land, buildings, and tools used for batik.

Labor is one of the most valuable assets for Micro, Small and Medium Enterprises (MSMEs). The quality and productivity of labor can directly affect the production of an MSME. In the context of small businesses where every resource is precious, the role of labor becomes crucial in determining the success and sustainability of the business. A competent and skilled workforce can improve operational efficiency,

speed up the production process and ensure that the products or services produced are of high quality. In addition, a highly motivated and dedicated workforce is more productive and can produce more goods in less time. This allows MSMEs to meet market demand more quickly and efficiently.

Raw materials can also affect the production of batik MSMEs. According to Prawirosentono (2007), raw materials are the main or basic ingredients of a product used in the production process of an industry. In the context of the batik industry, the raw materials used include cloth, malan, and natural or synthetic dyes.

The effect of capital, labor and raw materials on MSME production has generally been discussed by researchers empirically. Production theory explains that capital, and raw materials are considered inputs that contribute to output. The more capital invested, qualified or productive labor and raw materials used, the greater the output that will be produced (Adi, 2019). This is known as the production function, where the company's production output depends on the optimal combination of various inputs including capital, labor and raw materials. This is in line with the results of research by Astawa & Karmini (2024). The results of this study indicate that there is a positive and significant effect of capital and labor variables on the production of the jewelry industry in Bandung Regency. As well as research conducted by Wibowo & Nugroho (2018) where the results of this study show a positive and significant effect of capital, raw materials and labor on the production of the processing industry in Central Java.

Based on the explanation above, the researchers are interested in conducting research with the title "Analysis of the Effect of Capital, Labor, and Raw Materials on the Production of Batik MSMEs in Pamekasan Regency (Study in Proppo District)".

RESEARCH METHODS

This research uses a quantitative method with a descriptive approach. This research was conducted on Batik Micro, Small and Medium Enterprises (MSMEs) in Proppo District. The selection of this location is based on data from the Department of Industry and Trade which states that Proppo Sub-district is the area with the most batik craft potential in Pamekasan Regency. Based on the formulation of the problem in this study, the variables used include one dependent variable (production) and three independent variables (capital, labor and raw materials). The population in this study were all batik MSMEs in Proppo District with a total population of 129 business units. The sample in this study used 98 batik MSME business units in Proppo District which were determined using the slovin formula. The sampling technique with non- probability sampling in this study used purposive sampling, which is a sampling technique in which researchers select samples based on certain considerations or criteria that are considered relevant to the research objectives.

The data collection technique in this study is to use observation, interviews, questionnaires, and documentation techniques. type of data used in this research is primary data. Primary data was obtained directly through the process of filling out open questionnaires by batik MSME owners. Technique

The data analysis used in this study is multiple linear regression. The multiple linear regression formulation used is as follows:

$$\text{LnPRDK} = \beta_1 \text{LnMDL} + \beta_2 \text{LnTK} + \beta_3 \text{LnBB} + e \dots\dots\dots (1)$$

Where:

Ln = Natural Logarithm

PRDK = MSME

Production β_1 - β_2 - β_3 - β_4 =

Regression Coefficient MDL

= Capital

TK = Labor

BB = Raw Materials

e = Error

RESULTS AND DISCUSSION

Results

Multiple Linear Regression Test Results

Multiple linear analysis in this study aims to determine the influence of the independent variables (capital, labor, and raw materials) on the dependent variable (Production). The results of data processing using the Stata version 14 program can be seen in the following table

Table 2 Multiple Linear Regression Analysis Results

lnprdk	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
lnmdl	-.2727034	.0534199	-5.10	0.000	-.3787552	-.1666515
ln tk	.5975593	.0262329	22.78	0.000	.5454805	.6496381
lnbb	.5233748	.0548282	9.55	0.000	.4145271	.6322226

Source: Stata 14 output, 2024

Based on the analysis results in table 2 in the coef column. There is a capital coefficient of -0.273, a labor coefficient of 0.598 and a raw material coefficient of

0.523. So that the regression equation can be written into the form of a regression equation as follows:

$$\text{LnPRDK} = \beta_1 \text{LnMDL} + \beta_2 \text{LnTK} + \beta_3 \text{LnBB} + e \dots\dots\dots (2)$$

$$\text{LnPRDK} = -0.273 \text{LnMDL} + 0.598 \text{LnTK} + 0.523 \text{LnBB} + e$$

Based on the above equation, it can be described as follows:

1. The regression coefficient for the capital variable is -0.273, which means that if the capital variable is increased by 1 percent while other variables remain constant, it will cause a decrease in the production of batik MSMEs in Proppo District by 0.273 percent.
2. The regression coefficient for the labor variable is 0.598, meaning that if the labor variable is increased by 1 percent while other variables remain constant, it will cause an increase in the production of batik MSMEs in

Propopo District by
0.598 percent.

3. The regression coefficient for the raw material variable is 0.523, which means that if the raw material variable is increased by 1 percent while other variables remain constant, it will cause an increase in the production of batik MSMEs in Propopo District by 0.523 percent.

t Test (Partial test)

The t test is used to determine the effect partially or individually between the capital variable (X1) on Production (Y), the labor variable X2) on Production (Y) and raw materials (X3) on Production (Y). at a significance level (α) of (0.05).

Table 3 Statistical t Test Results (Partial Test)

lnprdk	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
lnmdl	-.2727034	.0534199	-5.10	0.000	-.3787552	-.1666515
lnthk	.5975593	.0262329	22.78	0.000	.5454805	.6496381
lnbb	.5233748	.0548282	9.55	0.000	.4145271	.6322226

Source: Stata 14 output, 2024

The regression equation above has the following meaning:

1. The significant value of capital (X1) is 0.000. The significant value is smaller than 0.05. So it can be concluded that capital has a negative and significant effect on the production of batik MSMEs in Propopo District.
2. The significant value of labor (X2) is 0.000. The significant value is smaller than 0.05. So it can be concluded that labor has a positive and significant effect on the production of batik MSMEs in Propopo District.
3. The significant value of raw materials (X3) is 0.000. The significant value is smaller than 0.05. So it can be concluded that raw materials have a positive and significant effect on the production of batik MSMEs in Propopo District.

F Test (Simultaneous)

The F test is used to test the effect of the independent variables, namely capital, labor and raw materials together on the dependent variable, namely the production variable of batik MSMEs in Propopo District, Pamekasan Regency. The F test is carried out by looking at the significant value of the F probability in the F statistical test results (Partial Test) with a significant level (α) of (0.05).

Table 4 F Statistical Test Results (Partial Test)

<code>. reg lnprdk lnmdl lntk lnbb, nocons vce (robust)</code>			
Linear regression			
Number of obs	=		98
F(3, 95)	=		87253.65
Prob > F	=		0.0000
R-squared	=		0.9994
Root MSE	=		.11919

Source: Stata 14 output, 2024

The significant value of the probability of F is 0.0000. The significant value is smaller than 0.05. Thus it can be concluded that the variables of capital, labor, and raw materials together have a significant effect on the production of batik MSMEs in Proppo District.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to show the level of influence of each independent variable on the dependent variable. The results of the coefficient of determination test in this study are as follows:

Table 5 Coefficient of Determination (R Square)

<code>. reg lnprdk lnmdl lntk lnbb, nocons vce (robust)</code>			
Linear regression			
Number of obs	=		98
F(3, 95)	=		87253.65
Prob > F	=		0.0000
R-squared	=		0.9994
Root MSE	=		.11919

Source: Stata 14 output, 2024

Stata 14 results can show that the R-squared value is 0.9994. The R-squared number illustrates how much the ability of the independent variable model is able to explain the dependent variable in a model by showing its significant level. From the regression results, the R-squared value is 0.9994, which shows the ability of the independent variable model (capital, labor, and raw materials) to the production of batik MSMEs in Proppo District, Pamekasan Regency as the dependent variable of 99.94 percent, while the remaining 0.06 percent is influenced by variables outside the model that are not explained in this study.

Discussion

The Effect of Capital on the Production of Batik MSMEs

Capital is the wealth that a person has to create a product. Capital is an important factor in business activities because capital is the lifeblood for the running of a company. There are two types of capital, namely fixed capital and variable capital (Sukirno, 2014). Initial capital is fixed capital that can be used continuously and in the long term such as land, buildings and tools used in the batik industry, while variable capital is capital that can change every time it produces such as the purchase of basic materials, consumables, workers'

wages, etc. In this study, the variable initial capital or variable capital is . In this study using the variable initial capital or fixed capital where the capital is in the form of land prices per meter, building prices and the price of tools used for batik owned by batik entrepreneurs when opening the business.

The results of hypothesis testing show that the form of the relationship between capital and the production of batik MSMEs in Proppo District is negative and significant. Based on the test results, it is not in accordance with the initial hypothesis which states that labor has a positive and significant effect on batik production. This shows that the greater capital used by entrepreneurs, it will

reduce the production results obtained because by increasing the allocation of funds to increase the area of land, buildings, and tools used, it will reduce the use of costs for labor and raw materials used so that production results will also decrease. Most of the batik entrepreneurs in Proppo District still rely on their own capital as the main source of running their business. The capital owned is relatively small so entrepreneurs must manage limited resources efficiently to produce maximum production.

The Effect of Labor on the Production of Batik MSMEs

Labor is someone who does work to help contribute their ideas in the batik production process in Proppo District, including outside the production environment Rosyidi (2009). The results of hypothesis testing show that the form of the relationship between labor and the production of batik MSMEs in Proppo District is positive and significant. Based on the test results, it is in accordance with the initial hypothesis which states that labor has a positive and significant effect on batik production. This shows that batik entrepreneurs who use more labor will increase the production of batik in Proppo District because by using more labor, workers can increase the use of raw materials in the production process. So that the use of more labor can increase production compared to entrepreneurs who use less labor.

This statement is in accordance with the theory according to Adam Smith as the main figure in the classical school, explaining that labor is the main driving factor in production so that without labor there will be no driving factor to carry out a production. Therefore, the more drivers will increase production. The results of this study are in accordance with previous research conducted by Ramadan *et al.*, (2020) which states that labor variables have a positive and significant effect on the production of batik crafts in Jambi City.

The Effect of Raw Materials on the Production of Batik MSMEs

Raw materials are all materials used in the production process to become a product that has more value. Raw materials are a variable resource. According to Rosyidi (2009), resource variables are changes in production output that are offset by changes in production input. The raw materials in this study are cloth, malam, and dye obtained from local shops that provide batik materials or buy them at the August 17 batik market.

The results of the hypothesis test show that the form of the relationship between raw materials and the production of batik MSMEs in Proppo District is positive and significant. Based on the test results, it is in accordance with the initial hypothesis which states that raw materials have a positive and significant

effect on batik production. This shows that the more raw materials used in a production, the greater the production results obtained because in the batik business raw materials are the main input in the production process, without raw materials which in the batik business are cloth, malam, and dyes, the production process cannot take place. The results of this study are also in accordance with previous research conducted by Sumolang *et al.*, (2019) which states that the raw material variable has a positive and significant effect on the production of processed fish small industries in Manado City.

CONCLUSIONS

Based on the results of research in the field regarding the effect of capital, labor, and raw materials on the production of batik MSMEs in Proppo District, Pamekasan Regency using Stata version 14, the researchers can provide the following conclusions:

1. The capital variable has a negative effect on the production variable because by increasing the allocation of funds to increase the area of land, buildings, and tools used it will reduce the use of costs for labor and raw materials used so that production results will also decrease.
2. The labor variable has a positive effect on the production variable because by using more labor, workers can increase the use of raw materials in the production process so that the use of more labor can increase production.
3. The raw material variable has a positive effect on the production variable because in the batik business, raw materials are the main input in the production process, without raw materials, which in the batik business are cloth, malam, and dye, the production process cannot take place.

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