Relationship between the price of raw materials of fabric with the amount of production produced

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ABSTRACT

Production is an activity carried out by a company to add use to an object or create new objects that are more useful for everyone to meet their needs. The Covid-19 pandemic has had a major impact on the textile sector. During this pandemic, demand in the local market has decreased significantly. The stock of goods owned by the local market cannot accommodate the decrease in demand. For convection or garment companies, the price of raw materials has increased by up to 30%. This increase certainly has an impact that makes it difficult to get raw materials for the production process. These results indicate that when the price of raw materials increases, there will be an increase in production, but when the price of raw materials decreases, it will make production decreases. An increase in production when the price of raw materials increases is a sign that garment business actors are still trying to meet consumer needs for garment products. This also indicates that garment entrepreneurs continue to increase production when raw material prices increase, which indirectly indicates that the garment industry has good potential to survive the COVID-19 pandemic.

Keywords: Production, Price, Raw of Materials, Fabric.

1. INTRODUCTION

In an industry, whether large or small, it must have and need raw materials. The raw materials owned will later be processed to create production results. The increase in world crude oil prices turned out to have an effect on the raw materials for making textiles. The increase in the price of raw materials for yarn and fiber types Paraxylene (PX), Methyl Ethylene Glycol (MEG), and other types has occurred since early February 2021, which increased by 15%. The fiber and yarn entrepreneurs do not reduce the amount of production but they inevitably have to increase the selling price with all the risks that will be obtained.

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The stock of goods owned by the local market cannot accommodate the decrease in demand. For convection or garment companies, the price of raw materials has increased by up to 30%. This increase certainly has an impact that makes it difficult to get raw materials for the production process. This increase also means that textile companies are forced to "lay off" their employees.

The Downstream Textile and Textile Products (TPT) Industry submitted a number of regulatory recommendations from various policy makers in order to respond to the crisis from the COVID-19 outbreak. Chairman of the Indonesian Textile Association (API) Jemmy Kartiwa Sastraatmadja said that they appreciated the government's steps to improve the textile industry and started curative measures by approving safeguards in the last six months. According to him, market demand has fallen sharply.

This phenomenon occurs on a larger scale and has a negative impact on the textile industry (economy.bisnis.com, 2020).

Production is an activity carried out by a company to add use to an object or create new objects that are more useful for everyone to meet their needs (b-minded.cekre.com). According to Mohammad Hatta (1994:4) production is all work that can generate efficiency, increase use, and share its benefits with others. Meanwhile, according to Heizer and Render (2005) production is a process of creating goods or services made from the company.

2. LITERATURE REVIEW

Fabric Raw Materials and prices

Raw materials (RM) are the main materials used as inputs in the production process for subsequent modifications and finally modified into finished goods. Raw materials may be in a processed or unprocessed state. Most of the raw materials are natural resources like cotton, oil, rubber etc. The materials are also converted for use in various processes before being used in the final manufacturing process. So we can say that, the processed or unprocessed material used to produce the final textile product is called TRM.

The textile industry uses various types of fibers that come from nature or are produced manually. These fibers are used to produce dresses, towels, blankets, etc. Some of these fibers were known and used in the early years of civilization, as well as in modern times. Other fibers have had varying degrees of importance in recent years. Factors influencing the development and utilization of these fibers include their ability to be spun, their availability in sufficient quantities, the cost or economics of production, and the desirability of their properties to consumers. "As raw material prices continue to rise, textile companies need to improve the precision of the production process to reduce raw material waste," said Gao Yong, vice president of the China Textile Industry Association (CTIA).

According to Yong, after the global financial crisis, the increase in the price of textile raw materials has exceeded the increase in oil prices due to supply shortages, and this trend is likely to continue. As a result, the reduction of raw material consumption becomes very important and precision production is much more important.
1. Selling price to consumers increases
2. Supply of raw materials for production decreased
3. Market demand will definitely decline
4. Employee salary will be taken into consideration

Factors that cause an increase in the price of fabric/textile raw materials .
1. The number of textile industries in Indonesia
2. The density of the amount of production produced by an industry caused by the large demand so that prices rise.
3. The imposition of Temporary Safeguard Measures (BMTPS) or safeguards on imports of textiles and textile products (TPT) such as yarn and fabric.
4. Increased demand for domestic materials.

Production Quantity Determination

By definition, production is an economic activity to produce or add value to the usefulness of a good or service. People or business entities that carry out production activities are called producers. In the English - Indonesian dictionary the word "production" linguistically means income. When human needs are not too many and still simple, production and consumption activities can be carried out alone, namely by producing and meeting their own needs. However, when the needs of these consumers are increasing and the available resources are limited, these consumers are no longer able to produce their own needs.

Efforts or Factors That Can Increase the Amount of Production
There are four factors to increase the yield/quantity of production:

1. Intensification
   Intensification is an effort made by increasing work productivity.
2. Extension
   Extensification is an effort made by increasing the factors of production.
3. Diversification
   This method is done by developing production results
4. Rationalization
   This rationalization is carried out by utilizing technological advances to expand knowledge which can later support the production process.

3. METHODOLOGY

Research design is a strategy used by researchers to combine and discuss research components logically, systematically and through analysis (rumusrumus.com, 2020). Research design is a guideline to be able to carry out research properly. The research method chosen is descriptive research method with a quantitative approach. Research method quantitative approach is a situation where a researcher explains how a variable can affect other variables. (Creswell, 2012:13).

Variable Operations

Operational variables are specific explanations given to a variable by providing specifications or the meaning of activities and operations needed in measuring these variables (Sugiyono, 2014). Research variables are all things determined by researchers to be studied so that they can obtain information and draw conclusions from the research (Sugiyono, 2014). Based on the selected research title, namely "The Relationship between the Price of Fabric Raw Materials with the Amount of Production Produced", then the variables studied can be divided into two, namely:
1. The Independent Variable (Variable X) is a variable that affects other variables (Widiyanto, 2013). In this study, the independent variable is the Price of Fabric Raw Materials.
2. Dependent Variable (Variable Y), is a variable that is influenced or caused by an independent variable (Sugiyono, 2016). In this study the dependent variable in this study is the amount of production produced.

Population and Sample

Population is a collection of subjects, variables, concepts or phenomena. Each member of the population can be studied in order to determine the nature of the population in question or to be studied (Morissan, 2012: 19). The population in this study were 100 fabric producers in Indonesia. The sample is part or representative of the population to be studied (Arikunto, 2019: 109). The sample of this research is 60 producers from 100 fabric producers in Indonesia.

Simple Regression

Simple Regression Analysis is a statistical method that serves to determine the causal relationship between the causal factor variable (X) and the resultant variable (Y). Variable X can be called as predictor and Variable Y as response. (technicseltronika.com, 2021). In this study, the causal factor variable (X) is "the price of fabric raw materials" and the resultant variable (Y) is "the amount of production produced". The Simple Linear Regression Equation Model is as follows:

$$Y = a + bX \ ......(1)$$

Information :
Y = Response Variable or Consequence Variable (Dependent)
X = Predictor Variable or Causative Factor Variable (Independent)
a = constant
b = regression coefficient (slope); the amount of Response generated by the Predictor.

The values of a and b can be calculated using the following formula:

$$a = \frac{(\Sigma y)\,(\Sigma x^2) - (\Sigma x)\,(\Sigma xy)}{n(\Sigma x^2) - (\Sigma x)^2}$$
$$b = \frac{n(\Sigma xy) - (\Sigma x)\,(\Sigma y)}{n(\Sigma x^2) - (\Sigma x)^2}$$

Data Collection Techniques

The questionnaire is a survey method of collecting data by giving a set of written questions to respondents (Sugiyono, 2010). This questionnaire was distributed online considering the conditions of the ongoing pandemic in Indonesia.

4. RESULT AND DISCUSSION

Coefficient of Determination

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.413[a]	.171	.157	2.70642

Coefficient of Determination

Based on the results of SPSS output obtained R2 of 0.171 which means 17.1% of raw material variables can explain the variable Amount of Production Produced the remaining 82.9% is explained by other variables.

Simple Regression

Hypothesis
H0: there is no significant effect between the price of fabric raw materials on the amount of production produced
Ha: there is a significant effect between the price of raw materials for fabrics on the amount of production produced

Decision making basis
Sig >α → H0 accepted
Sig <α →H0 rejected

Table 2. Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.731	6.623		.261	.795
	Raw material prices	.782	.226	.413	3.458	.001

Sig: 0.001 < 0.05 then H0 is rejected
3.458 > 1.67 then H0 is rejected

Based on the results of SPSS output, the T value is obtained. Count is 3,458 which is greater than T. Table 1.67, this is supported by the sig value of 0.001 which is smaller than the alpha of 0.05. Therefore, it can be concluded that there is a significant influence between the price of fabric raw materials on the amount of production produced.
Regression Equation

$$Y = a + bX$$

Information:
a   = constant
Y   = amount of production produced
bX   = price of fabric raw materials

$$Y = 1.731 + 0.782X$$

Positive X coefficient = 0.782, If, the price of raw material for cloth (X) increases by 1 point. So, the amount of production produced (Y) will increase to 0.782. If, the price of raw material for fabric (X) decreases by 1 point. So, the amount of production produced (Y) will decrease to 0.782. If, the price of fabric raw materials (X) is equal to 0. Then, the amount of production produced (Y) is 1,731.

5. CONCLUSION

Statistical results show that the data used are normally distributed so that the research data is objective data and can reduce biased conclusions. Statistical results also show that there is no heteroscedasticity, so the research data can be used for hypothesis testing. The results of the autocorrelation test strengthen the results of the previous test which confirms that the test results do not show any autocorrelation, so that the results of hypothesis testing show the real situation that there is no manipulation and can be used as a basis for decision making. Hypothesis testing using regression analysis shows that t.count is greater than t.table which indicates that there is a significant influence between the price of raw materials for fabrics on the amount of production produced. These results indicate that when the price of raw materials increases, there will be an increase in production, but when the price of raw materials decreases, it will make production decreases. An increase in production when the price of raw materials increases is a sign that garment business actors are still trying to meet consumer needs for garment products. This also indicates that garment entrepreneurs continue to increase production when raw material prices increase, which indirectly indicates that the garment industry has good potential to survive the COVID-19 pandemic.

The suggestions given are based on the discussion and conclusions of this study, so it can be put forward some suggestions that can be used as consideration for interested parties. These suggestions are that the textile industry has a pretty good prospect to be developed because the big opportunities, both domestically and abroad are still very large and are still very possible to be exploited. In the absorption of labor, the effect of the value of output has a considerable influence, related to the opportunity for the gang market to be prospective for the industry, so its role in labor is still possible to be increased in terms of the quantity of production Of course, this must be accompanied by an increase in quality in order to have a great opportunity to penetrate the market. The results of the study indicate that in the textile industry it can be seen from the very large influence of the output value variable, while the influence of the level of technology is not so significant. Therefore. So the use of advanced technology in this industry is not so worrying that it will reduce job opportunities.

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