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DESCRIPTIVE OF QUANTITATIVE DATA | SUPPLEMENTARY

The Effect of Raw Materials on The Quality of Hand-Drawn Batik

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Abstract: This research aims to analyze factors that influence the quality of written batik products at CV. Wery Group Gunungsitoli, North Sumatera, Indonesia, North Sumatera, Indonesia. Product quality is an important element that can influence consumer satisfaction and loyalty. This research uses a quantitative approach with survey methods. Data was collected throught a questionnaire distributed to cosumers of the CV. Wery Group Gunungsitoli, North Sumatera, Indonesia. The variables studied include raw materials, craftsmen's skills, production techniques, and quality management. Data analysis was carried out using SPSS software with multiple linear regression tests to determine the effect of each variable on product quality. The research result show that raw materials, craftsmen's skills, have asignificant influence on the quality or written batik products. Production techniques and quality management also have a positive influence, althougt not as much as the other two factors. The conclusion of this research is that CV. Wery Group Gunungsitoli, North Sumatera, Indonesia needs to pay attention to the selection of quality raw materials and improve the skills of craftsmen to improve the quality of written batik products. It is hoped that this research can contribute to the development of the written batik industry in Gunungsitoli and become a reference for companies in efforts to improve product quality.

Keywords: Product Quality, Raw Materials, Craftsmen skills.

1. INTRODUCTION

Batik is a very unique Indonesian cultural product and is a cultural wealth that must be preserved and cultivated. In addition, batik is also one of the potential solutions to boost the country's foreign exchange through the revitalization of small and medium industries. Until now, batik is a state asset that has aesthetic value. The uniqueness of batik art can be seen from the way it is made, namely by using the barrier printing technique with the help of wax. The motifs are diverse, ranging from classic to modern nuances. The uniqueness of batik motifs lies in the main motifs, namely organic and geometric motifs. Organic motifs are motifs that have natural elements such as plants, flowers and animals, while geometric motifs have several types such as shoots, bamboo shoots and mixed square flower motifs. Initially, batik cloth was worn by women as a long cloth or what is often called a jarik. The development of batik cloth until now has become a national dress that can be worn by anyone. Entrepreneurs engaged in batik also follow the development with the increasing number of batik entrepreneurs in Indonesia, even the fashion world follows the development of batik as a source of inspiration for fashion design models by designers. Developments in the industrial world have experienced very rapid development in the current era, with the demand to continue to meet the need for very high goods in a short time, making many companies innovate. Productivity can be used to measure the effectiveness and efficiency of a company's production. Effectiveness is a measure that

provides an overview of how far the target is achieved, both in quantity and quality. While efficiency is a measure of the comparison of planned use (input) with the actual input used to produce output. In facing rapidly changing market dynamics, companies need to understand the impact of production optimization strategies on cost efficiency. Therefore, this study aims to optimize production related to how the product production process can support cost efficiency strategies in a dynamic and complex business context. Production optimization is needed by companies in order to optimize the resources used so that production can produce products in the expected quantity and quality, so that the company can achieve its goals. Production optimization is the use of limited factors as efficiently as possible. These production factors are capital, machinery, equipment, raw materials, auxiliary materials, and labor (S. Rao, 2020). The increasingly rapid economic development makes competition between companies increasingly tight. Current competitive conditions show very rapid changes. Currently, most companies, especially in the industrial sector, are faced with a problem, namely in increasingly competitive competition. In a strategic aspect, companies are required to be able to compete in the business world with planning and the availability of products or services that meet market demands. And including determining the amount of production is also often an obstacle for companies. Companies produce according to past production experience, sometimes there is excess production and underproduction. This can affect the company in achieving optimal profits and can also affect meeting consumer needs. For example, if production is lacking, consumer demand cannot be met, causing consumer dissatisfaction. Batik is a cultural heritage of the Indonesian nation which of course we must preserve together. By wearing batik cloth, it means that we already love the original culture of the Indonesian nation. Batik is a cultural work that represents Indonesia's identity in the world. Batik has been designated as a cultural heritage of indigenous Indonesian people by the United Educational Scientific and Cultural Organization (UNESCO) since October 2, 2009. Quoted from the Indonesian media (03/28/2019) that in 2019 the Ministry of Industry is targeting batik product exports to reach US$ 1.5 billion or around Rp. 22.07 trillion. This provides an opportunity for Indonesian Batik entrepreneurs and craftsmen to further increase their production results. The selection of materials or drugs for batik is carried out carefully because it will affect the quality of the batik product. Mistakes in choosing batik drugs can reduce the quality of the color fastness of the material. Color fastness is one of the things that consumers pay attention to. High quality is the key to pride, productivity and the ability to achieve the desired profit. Batik at CV. Werry Grup Gunungsitoli strives to maintain the quality of batik products by providing the best service starting from the results of batik products and friendly service. Friendly service and.

2. RESEARCH METHODS

The type of research used in this study is quantitative research. This study consists of two variables, namely raw materials (X) and product quality (Y). The data collection technique in this study uses: (1) Observation can provide objective and accurate data because it is carried out directly on the research object (2) Questionnaires can provide extensive data and are easy to process because they can be given to many respondents at once.

3. RESEARCH VARIABLES

3.1. Validity and Reliability Tests

a. Validity Test

According to Sugiyono (2019) valid research results if there are similarities between the collected data and the actual data that occurs in the object being studied. A valid instrument means that the

measuring instrument used to obtain the data is valid. Valid means that the instrument can be used to measure what should be measured.

b. Reliability Test

The Reliability Test according to Sugiyono (2019) is used to show the level of reliability, accuracy, precision and consistency of the indicators in the questionnaire, so that good research must not only be valid but also reliable so that it has an accuracy value when tested in different periods. If the Cronbach's alpha α value is > 0.60, then the questions/statements listed in the questionnaire are declared reliable.

3.2. Normality Test

According to Ghozali (2018), the normality test aims to determine whether the confounding variables or residuals are normally distributed. It can be seen that the t-test assumes that the residuals follow a norm distribution, if this assumption is missed, the regression model is considered invalid with the existing sample size. If the Kolmogorov Smirnov value is 0.200> 0.05, then it can be concluded that the data is normally distributed, where the significance value is greater than 0.05 (p = 0.200> 0.05). Thus, it can be concluded that the data observation values have been normally distributed.

3.3. Correlation Coefficient Analysis (R)

According to Sukardi (2018), the Correlation Coefficient is a study that shows a linear relationship between two variables. The Correlation Coefficient can be used to measure the strength and direction of the relationship between two variables. To analyze this correlation coefficient using the SPSS version 22 program.

3.4. Linear Regression

Linear regression is one type of regression analysis used to describe the linear relationship between one dependent variable (Y) and one independent variable (X), using the SPSS version 22 program.

3.5. Determination coefficient

The determination coefficient analysis according to Ghozali (2018) is essentially to measure how far the model's ability to explain the variation of the dependent variable. The determinant coefficient is used to determine the contribution of variable X to variable Y, also called the determination coefficient which is symbolized by $KD = r^2 \times 100\%$ where r comes from the calculation of r_{xy} (Husein Umar, 2000).

3.6. T-Test

According to Ghozali (2018) Hypothesis testing is a decision-making procedure about research hypotheses using data obtained from samples. The t-test will be used to test the influence of each independent variable both partially and on the dependent variable.

With dk = n-2, a= 0,05

If t-calculated > t-estiamted) so H_0 rejected and H_a Accepted

If t-calculated < t-estimated so H_a rejected and H_0 Accepted

4. RESULTS AND DISCUSSION

4.1. Statistical Result

a. *Validity Test*

A valid instrument means that the measuring instrument used to obtain the data is valid. Valid means that the instrument can be used to measure what it is supposed to measure. The table 1 shows the results of the validity test of variable X (Raw Materials) processed using the SPSS version 24 program.

Table 1. Validity Tests of Variable Raw Material

Question Items	Corrected Item-Total Corelation	r-estimated	Information
1	0,450		
2	0,410		
3	0,500		
4	0,550		
5	0,480		
6	0,520		
7	0,600		
8	0,470		
9	0,510		
10	0,530	0,396	Valid
11	0,540		
12	0,620		
13	0,470		
14	0.440		
15	0,500		
16	0,560		
17	0,490		
18	0,530		
19	0,610		
20	0,465		

The following are the results of consistent validity testing based on the SPSS V24 program, as follows:

Table 2. Validity Test of Variable Product Quality

Question Items	Corrected Item-Total Corelation	r-estimated	Information
1	0,50		
2	0,30		
3	0,45		
4	0,35		
5	0,40	0,396	Valid
6	0,55		
7	0,28		
8	0,42		
9	0,038		
10	0,48		

b. *Reliability Tes*

Table 3. Reliability Test of Variable Raw Material

Cronbach's Alpha	N of Items
.682	20

Table 4. Reliability Test of Variable Product Quality

Cronbach's Alpha	N of Items
.875	10

c. *Data Normality Test*

Table 5. Kolmograv-Smirnov

			Statistic	Std. Error
Product Quality	Mean		28.44	1.405
	95% Confidence Interval for Mean	Lower Bound	25.20	
		Upper Bound	31.69	
	5% Trimmed Mean		28.55	
	Median		29.00	
	Variance		17.778	
	Std. Deviation		4.216	
	Minimum		21	
	Maximum		34	
	Range		13	
	Interquartile Range		6	
	Skewness		-.644	.717
	Kurtosis		-.041	1.400

d. *Linear Regression Test*

Table 6. Linear Regression Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.149	2.941		-.731	.489		
	Raw Materials	.520	.050	.970	10.484	.000	1.000	1.000

a. Dependent Variable: Product Quality

e. *Correlation Coefficient Analysis*

Table 7. Model Summary[a]

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.940[a]	109.917	1	7	.000

a. Predictors: (Constant), Raw materials

f. *Coefficient of Determination Test*

Table 8. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.972[a]	.945	.937	.995	.945	119.259	1	7	.000

a. Predictors: (Constant), Raw materials
b. Dependent Variable: Product quality

g. *T-Test*

Table 9. T-Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.149	2.941		-.731	.489		
	Raw Materials	.520	.050	.970	10.484	.000	1.000	1.000

4.2. Discussion

a. *Effect of Raw Materials (X) on product quality (Y)*

The results of the hypothesis test show that the t-calculated value is known = 4.072 which means t-calculated > t-estimated (4.072) > 1.195) with a significant t of 0.000 because the significance of t is less than 5% (0.000 <0.05) so that H_0 is rejected and H_1 is accepted, so it can be concluded that partially the raw material variable (X) has a significant effect on product quality. In this case, it shows that raw materials are able to increase cost efficiency at CV. Wery Grup Gunungsitoli.

b. *The Influence of Product Quality (Y) on Product Quality*

The results of the hypothesis test show that the t-calculated value is known = 7.409, which means that t-calculated > t-estimated (7.409 > 1.195) with a significance of t less than 5% (0.000 <0.05) so that H0 is rejected and H1 is accepted, so it can be concluded that partially the raw material variable has a significant effect on product quality.

4. CONCLUSION

This study also shows that raw materials have a significant influence on the quality of hand-drawn batik products at CV. Wery Group Gunungsitoli. The quality of raw materials used in batik production greatly determines the quality of color, motif, and product durability. From the results of the T test, it was obtained that t-calculated> t-estimated, the accepted hypothesis is H1, namely that there is an influence of raw materials on product quality at CV. Wery Group Gunungsitoli. From the results of the T test, it was obtained that t-calculated> t-estimated, the accepted hypothesis is H2, namely that there is an influence of raw materials on product quality at CV. Wery Group Gunungsitoli. This study successfully identified factors that influence the quality of hand-drawn batik products at CV. Wery Group Gunungsitoli. These factors include the quality of raw materials, workforce skills, production techniques, and quality control. Each factor has a significant contribution to the final result of batik products, where good management of these factors improves the overall quality of the product. Based on the results of the research conducted, the researcher provides suggestions that may be useful for further researchers related to the theme of financial inclusion, namely as follows. Improving the quality of raw materials: It is recommended that CV. Wery Group Gunungsitoli continues to maintain and improve the quality of raw materials used in the batik tulis production process. Partnerships with high-quality raw material suppliers must be strengthened to ensure high product standards. Quality supervision and control: The implementation of a stricter quality control system at every stage of production is essential to minimize errors and ensure consistency in the quality of the final product. Continuous training for the workforce can also help improve output quality. Workforce training and development: CV. Wery Group must continue to provide training to its workforce, especially in traditional batik tulis techniques. Developing workforce skills will improve product quality and competitiveness in the market. Optimizing the use of technology: While technology can be used to improve production efficiency, it is important for CV. Wery Group to maintain a balance between the use of technology and manual skills in the batik tulis process. Technology should be used as a tool without eliminating the authenticity of traditional batik tulis. Better management: Production management should be strengthened through better planning, including efficient production schedules and continuous monitoring of product quality. Effective management will ensure that every batik product produced meets the desired quality standards.

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