

THE IMPACT OF CULTURE, PROCEDURE AND PROCESS OF QUALITY THROUGH QUALITY CONTROL TOWARDS PRODUCT QUALITY

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ABSTRACT

This research aims to test and analyze the influence of quality culture, quality procedures, production processes on the quality of silk cloth production in South Sulawesi province and test and analyze the influence of quality culture, quality procedures, production processes on product quality through quality control of silk fabrics in South Sulawesi. Quantitative Research approach, by using survey and questionnaire methods to dig up information related to activities, where 200 as respondent, by analysis method using statistical equation model (SEM). The results showed that quality culture has a positive effect not to be denied to the quality of products, and the production process has a positive effect on product quality and quality procedures have a positive and significant effect on product quality through quality control. While Quality Culture has a significant positive effect on quality control, and production processes have a significant positive effect on quality control

ABSTRAK

Penelitian ini bertujuan, untuk menguji dan menganalisis Pengaruh budaya mutu, prosedur mutu, proses produksi terhadap kualitas produksi kain sutera di provinsi Sulawesi-Selatan dan menguji serta menganalisis Pengaruh budaya mutu, prosedur mutu, proses produksi terhadap kualitas produk melalui pengendalian mutu kain sutera di provinsi Sulawesi-Selatan. Pendekatan Penelitian kuantitatif, dengan menggunakan metode Survey dan Kuisisioner untuk menggali informasi yang terkait dengan kegiatan, jumlah keseluruhan dimana sampel sebanyak 200, dengan metode analisis dengan menggunakan Statistical Equation Model (SEM). Hasil penelitian menunjukkan Budaya mutu berpengaruh positif tidak signifikan terhadap kualitas produk dan proses produksi berpengaruh positif tidak signifikan terhadap Kualitas produk dan prosedur mutu berpengaruh positif dan signifikan terhadap kualitas produk melalui pengendalian mutu. Sementara Budaya Mutu berpengaruh positif signifikan terhadap pengendalian mutu, dan Proses Produksi berpengaruh Positif signifikan terhadap Pengendalian Mutu.

INTRODUCTION

Companies in producing goods and services should pay attention to competition and have a competitive advantage in order to survive in good industries of the same kind, one way is to produce quality products and services, produce quality products that mean creating a work process in the company that ensures the production of a product that is in accordance with certain quality standards. The production process is an activity involving human resources, materials and equipment to produce useful products (Sofjan Assauri, 2016), in the implementation of control of production processes in the factory are employees, conditions and working methods organized, prepared raw materials and equipment facilities to convert raw materials into products. ensuring the quality of materials, process control to stabilize working conditions and methods and facility control to stabilize the performance of facilities /

machines (Hanum Nindito, 2016) Quality procedures are stages carried out from various activities in a particular operation based on a certain order of time and procedures that have been set repeatedly. Although in the field of texture quality procedures are unclear and many buyers do not understand, it is not true who considers it not important, because it will be ignored in the process of production.

Product manufacturers know that it is not always possible to inspect every product and every aspect of the production process at all. The challenge is to design ways to maximize the ability to monitor the quality of products produced and eliminate defects, one way to ensure quality products are inherent quality into the production process. Paying attention to quality will have a positive impact on the business in two ways, namely the impact on production costs and the impact on revenue (Gaspersz, 2002). The impact on production costs occurs through the process of making products that are in accordance with predetermined standards so that they are free from the level of damage. Because in products that are damaged will absorb production costs such as raw material costs, direct labor costs and factory overhead costs, it can be understood the phenomenon and facts of each of the observed variables, where the quality quality of a product results in a decrease in the profits of a company.

One form of production is the weaving industry, Silk Weaving Industry is one of the industrial sub-sectors that produces not only silk fabric but also has the potential to be developed because the demand for natural silk fabric is relatively unaffected by the change in economic situation because the market already exists, namely consumers of the upper middle class. Because the Company that produces and sells silk fabrics not only produces silk fabrics but also other productions such as seat seats, curtains, bed covers, decorations and interiors of hotels. The amount that can be produced from silk fabrics so that it causes a lot of demand for natural silk fabrics in domestic and foreign markets.

The problem that exists one of them can be identified from the results of interviews with respondents, namely the lack of good silk quality. This is because the product does not meet standards or defects. The interview results to the silk fabric producing company in Wajo, explained the average number of production and the number of defects for approximately four months, from the amount of production of 4,480 meters, the number of defected production there were 253 meters, and the results of research of the quality control group of SUTRINDA UTAMA" at Wajo district in 2011, using pareto diagram that found the amount of production losses due to three things, namely less Weaver Productivity, Many production defects and unstable fabric width resulting from 300 meters of fabric there are 31 meters damaged. The above problems need to be found a way out, so that losses to the company can be suppressed as small as mungkn and problems can also be obtained in the silk fabric industry in Wajo district, Soppeng, Bone from the planting stage of Murbey plants, difficulty getting high-quality silk thread raw materials for local materials Entrepreneurs or craftsmen.

Generally, the productivity of silk fabrics is not machine looms (ATBM) in Wajo Regency, Watang Soppeng, Watanpone is relatively low with diverse quality, many factors cause the quality of silk fabric such as poor yarn quality, business management, lack of knowledge in the production process, capital owned by producers. The appearance of the quality of silk fabric will ultimately determine the price of silk fabric in the market. In addition, the condition of ATBM scattered in people's homes, which is sometimes far from the center of the economy that leads to the formation of a long chain of commerce. This happens because of the hierarchical role of intermediary traders who tend to increase the complexity of silk fabric quality improvement efforts, (Naninsih, 2006).

To keep quality at the desired level, all companies employ the concept of quality control. Companies that want to survive must be able to implement quality control (according to the textile hall Sul-Sel Provision (2003) that quality control is related to the evaluation of testing data and its application to the control of raw material processes, semi-finished materials and finished materials, Quality control is an integrated activity ranging from control of material quality standards, production process standards / semi-finished goods, finished goods, until the standard delivery of final products to consumers so that goods & services produced in accordance with the planned quality specifications (Suyadi Prawiro Soetono, 2004: 71) the core is that quality control programs are used to make a fundamental contribution to the formation of quality products or services oriented to customer satisfaction. Quality can not only be realized only by inspection. Quality must also be built during the production process.

This research is supported by several previous studies that can be used as a comparison to look at phenomena and observe the variables of the study. Previous research that examined quality control to increase production is Pransisco javier Blanco, Encomienda Elena Rosillo Diaz (2018), Edwin tytyk, beata m rugaiskn, (2015). Murni Devi Astuti, Wiwiek R. Adawiyah, Bambang Setyobudi Iriantoko,2019, Sri meutia, Syamsul Bahri, dirahayu (2018), Peni Sawitri,2018 Hery Purnomo, Lilia Pasca Riani (2018) Monica Elisa Napitupulu and Shinta Wahyu Hati (2018). In general, they recommend that quality control in the process is highly considered by the company because if the resulting product is damaged or failed and cannot be repaired then it cannot be sold to the detriment of the company.

RESEARCH METHOD

This research is *explanatory research* by applying survey methods. Explanatory (comparative and correlational) research is a study that aims to find an explanation of the functional relationship or influence between one variable and another, and conduct hypothesis testing that has been proposed. Based on the data aspect, this study is an analytical study because it analyzes data from samples using generalized inductive statistics to go to the population. Based on the problem, this study is a causality study that seeks to explain the causal relationship of Product Quality through Quality Control of Kain Sutera Business in Sulawesi-South Province. The research location was conducted at the Silk Weaver as a research object to see the main factors of product quality through Quality Control of Kain Sutera Business in Sulawesi-South Province.

The population in this study was the entire Kain Sutera Weaver in Sulawesi-South Province. (Wajo Regency, Watang Soppeng.Watanpone) The population in question is 200 weavers. The determination of the number of samples used by the author in this study is by the saturated sample method based on the provisions put forward by Sugiyono (2017: 124) who said saturated sampling material is a sample collection technique when all members of the population are used as samples. The number of samples in this study is 200 Silk weavers in Wajo, Watang Soppeng, Watanpone.

As for the respondents of each district that became a sample in table 1 below:

Table 1. Samples

No.	Location	samples
1	Kab.Wajo	115
2	Kab. Soppeng	45
3	Kab.Bone	40
	Total	200

Source: Research Result, 2021

The data analysis methods used to explain in this study are descriptive statistical analysis techniques and *Structural Equation Modeling* (SEM) analysis. Calculations in descriptive statistical analysis are performed with the help of computers using AMOS 25.0 and SPSS program packages version 22.0.

RESULTS AND DISCUSSION

Test validity and Reliability

The instrument is conducted by an inter correlational test and if the probability value $r < 0.05$ then the item in question is said to be valid (see appendix). While the instrument reliability test is done by looking at the Cronbach coefficient, and if > 0.6 then the research instrument is said to be reliable. Summary of the results of the test validity and reliability of the research instrument can be seen in Table below.

Table 2. Results of Validity and Reliability

Variable	Indicators	R	Sig.	Information	Reliability	Information
Quality Culture	X1.1	0,595	0,000	Valid	0,737	Reliable
	X1.2	0,724	0,000	Valid		
	X1.3	0,774	0,000	Valid		
	X1.4	0,698	0,000	Valid		
	X1.5	0,624	0,000	Valid		
Quality Procedures	X2.1	0,832	0,000	Valid	0,761	Reliable
	X2.2	0,855	0,000	Valid		
	X2.3	0,787	0,000	Valid		
Production Process	X3.1	0,705	0,000	Valid	0,725	Reliable
	X3.2	0,757	0,000	Valid		
	X3.3	0,785	0,000	Valid		
	X3.4	0,710	0,000	Valid		
Quality Control	Y1.1	0,742	0,000	Valid	0,671	Reliable
	Y1.2	0,766	0,000	Valid		
	Y1.3	0,826	0,000	Valid		
Product Quality	Y2.1	0,674	0,000	Valid	0,889	Reliable
	Y2.2	0,873	0,000	Valid		
	Y2.3	0,767	0,000	Valid		
	Y2.4	0,895	0,000	Valid		
	Y2.5	0,741	0,000	Valid		
	Y2.6	0,696	0,000	Valid		
	Y2.7	0,707	0,000	Valid		
	Y2.8	0,692	0,000	Valid		

Source: Research Result, 2021

Validity indicates the extent to which the gauge is measured. The validity of an instrument item can be known by comparing the value of *Pearson's product moment* correlation coefficient at a significance level of 5% Based on Table 6 it can be known that the research instruments for all indicators are valid. Reliability shows the extent of the reliability of a measuring device so that anyone who makes the measurement will be relatively the same. Reliability test results show that for all dimensions variables are also reliable as seen from the value of the Cronbach coefficient > 0.6 . After testing the validity and reliability of indicators and subsequent items, the validity of the dimensions and variables of the study was carried

out. The results of variable dimensional validity and reliability tests are also valid and reliable. α

Hypothesis Testing

Based on the empiric model carried out in this study can be tested against the proposed hypothesis through testing the path coefficient on the structure equation model. Table 2 is a hypothesis test by looking at value values, if the p-value is less than 0.05, then the influence between variables is significant. The test results are presented in the following table:

Table 3. Total Influence, Direct Influence and Indirect Influence Between Variables

No.	Variable			P-Value	Direct Effect	Indirect Effect	Total Effect	Sig.
	Exogenous	Intervening	Endogenous					
H-1	Quality culture (X1)	Quality control (Y1)	-	0.027	0.164	-	0.164	Significant
H-2	Quality procedures (X2)	Quality control (Y1)	-	0.048	0.174	-	0.174	Significant
H-3	Production process (X3)	Quality control (Y1)	-	0.000	0.430	-	0.340	Significant
H-4	Quality control (Y1)	-	Product quality (Y2)	0.000	0.595	-	0.595	Significant
H-5	Quality culture (X1)	-	Product quality (Y2)	0.624	0.019	-	0.019	Insignificant
H-6	Quality procedures (X2)	-	Product quality (Y2)	0.037	0.086	-	0.086	Significant
H-7	Production process (X3)	-	Product quality (Y2)	0.649	0.021	-	0.021	Insignificant
Indirect Influence Between Variables								
	Variable			P-Value	Direct Effect	Indirect Effect	Total Effect	Sig.
	Exogenous	Intervening	Endogenous					
H-8	Quality culture (X1)	Quality control (Y1)	Product quality (Y2)	0.019	0.019	2.072	2.072	Significant
H-9	Quality procedures (X2)	Quality control (Y1)	Product quality (Y2)	0.029	0.086	1.890	1.890	Significant
H-10	Production process (X3)	Quality control (Y1)	Product quality (Y2)	0.000	0.021	3.798	3.796	Significant

Source: Data Results 2021

The entire model 9 direct paths hypothesized there is one insignificant direct path. The interpretation of the table can be explained as follows:

1. Quality culture has a positive and significant influence on quality control with a p-value = $0.027 < 0.05$ with a coefficient value of 0.164 the coefficient indicates that the improvement of *quality culture* variables, will be followed by improvements in quality control. (Hypothesis 1 accepted)
2. Quality procedures have a positive and significant influence on quality control with a p-value = $0.048 < 0.05$ with a coefficient value of 0.174, the coefficient indicates that the

improvement of quality procedure variables, will be followed by improvements in quality control. (Hypothesis 2 Accepted)

3. The production process has a positive and significant influence on quality control with a p-value = $0,000 < 0.05$ with a coefficient value of 0.430, the coefficient indicates that the increase in the production process variable, will be followed by an increase in quality control. (Hypothesis 3 accepted)
4. Quality control has a positive and significant influence on product quality with a p-value = $0,000 < 0.05$ with a coefficient value of 0.595, the coefficient indicates that improved quality control, will be followed by improvements in product quality control. (Hypothesis 4 accepted)
5. Quality culture has a positive and insignificant influence on product quality with a p-value = $0.624 > 0.05$ with a coefficient value of 0.263, the coefficient shows that the improvement of *quality culture* variables, has not been able to maximize the improvement in product quality. (Hypothesis 5 Accepted)
6. Quality procedures have a positive and significant influence on product quality with a p-value = $0.036 < 0.05$ with a coefficient value of 0.086, the coefficient shows that the improvement of quality procedure variables, has not been able to maximize the improvement in product quality. (Hypothesis 6 Accepted)
7. The production process has a positive influence but not significant on the quality of the product with a p-value = $0.649 > 0.05$ with a coefficient value of 0.021, the coefficient shows that the increase in the production process variable, has not been able to maximize the improvement in product quality. (Hypothesis 7 accepted)
8. Quality culture has a positive and significant influence on product quality through quality control with a p-value = $0.019 < 0.05$ with an indirect effect value of 2,072, this coefficient indicates that there is an improvement in quality culture, will be followed by improving product quality through quality control. (Hypothesis 8 accepted)
9. Quality procedures have a positive and significant influence on product quality through quality control with a p-value = $0.029 < 0.05$ with an indirect effect value of 1,890, this coefficient indicates that there is an improvement in quality procedures, will be followed by improving product quality through quality control. (Hypothesis 9 accepted)
10. The production process has a positive and significant influence on the quality of the product through quality control with a p-value = $0.000 < 0.05$ with an indirect effect value of 3,798, this coefficient indicates that there is an improvement in the production process, will be followed by improving product quality through quality control. (Hypothesis 10 accepted)

In this study there is an intervening variable that is a product quality variable. According to (Waljianah, 2013) to find out the influence of indirect variables through intervening variables and see the significant extent can be done with a procedure developed by Sobel (1982) known as the *Sobel Test (sobel test)*. In this study researchers will test the influence between quality culture, production process, quality procedures, on product quality through quality control. The sobel test is performed by testing the indirect influence power of independent variables (X) to dependent variables (Y) through intervening variables (M). Indirect influences X to Y through M are calculated by multiplying path X to M(a) by path M to Y(b) or ab. So the coefficient ab = 115

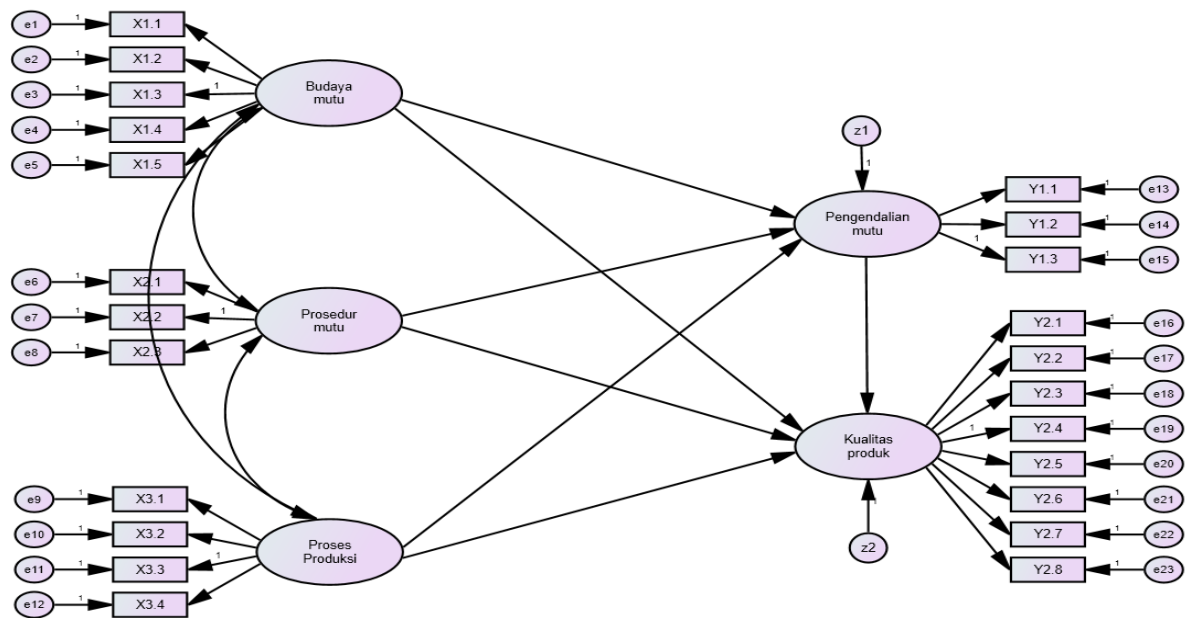


Figure 1. Hypothesis testing

Discussion

Effect of Quality culture on Quality Control

In this study, the quality culture above the top five indicators is a focus on customer, employee engagement and empowerment, continuous improvement, teamwork and process management. Customer focus is measured through statement items i.e. Leaders have a good commitment related to quality planning and customer focus, Employee engagement and empowerment is measured through statement items i.e. all parties play an important role in the successful implementation of quality, and continuous improvement is measured through statement items that in producing silk fabrics required continuous improvement. And Teamwork is measured through statement items that in work have a clear work definition and done all lines in the employee. And finally process management is measured through 2 statement items, namely always doing training periodically for quality improvement and always trying to implement cultural changes to lead to a better direction.

While quality control is divided into three indicators, namely raw material control, product quality control in production and quality control of final products. For the control of raw materials is measured through two statement items, namely always have control over the supply of raw materials and there is always control against defects in product damage. For product quality control in production is measured through three statement items, namely correction actions required to address quality problems are always held in a timely manner, the policies and maintenance procedures implemented are able to support the success of the achievement of the expected amount and quality of production, there are analytical actions and remedial actions if there is a difference between planned production activities and those that actually occur. And quality control of the final product is measured through two statement items, namely control of the quality of the product is adequate, conduct an analysis of the defective product to find out the causative factors and try to take precautions.

Based on the results of the first hypothesis research can be observed from the results of SEM analysis in Table 14. From the Table shows that quality culture has a significant positive effect on quality control.

Effect of Quality Procedures on Quality Control

In this study, quality procedures are for the top three indicators, namely periodic inspection, compliance with standard procedures, application of quality manuals. On periodic inspections are measured through three statement items, namely the creation of standard procedures related to the application of quality well and the Leader directly supervises workers to comply with established standards and work procedures and periodic supervision has been carried out with good quality application. Compliance with standard procedures is measured through statement items, namely in working has complied with standard procedures applied related to the application of quality, and in the application of quality manuals measured through statement items in work always applying continuous improvement targets to certain standards.

Based on the results of the second hypothesis can be observed from the results of path analysis in Table 14. From the table shows that quality procedures have a positive and significant effect on quality control. The results of this study show that periodic activities, compliance with standard procedures and the application of quality manuals conducted by Silk craftsmen in Wajo, Watansoppeng and Watampone regencies have significantly improved quality control.

Effect of production process and quality control.

The test results in Table 14 show that the production process has a significant positive effect on quality control with $P = 0.000 < 0.05$ with a coefficient value of 0.430, from the Table shows that the production process has a positive and significant effect on quality control. This shows that the better the production process, the better quality control.

In this research, the production process is above four indicators, namely Production Technology, Equipment type, type of process and flow of production process, facility layout. The type of equipment measured through statement items is to have technical standards in planning production activities. And the type of process and flow of the production process is measured through statement items, namely before work always provide raw materials required for production activities so as not to inhibit production activities, while the type of process and flow of production processes are measured through two statement items, namely the production activities of each part are always on time in their completion and in work always perform certain methods to evaluate the production process. And the layout of the Facility is measured through statement items, namely the implementation of production activities in accordance with the work instructions given.

This finding indicates that the production process carried out by silk artisans in Wajo, Soppeng, bone regency can directly affect quality control. That if silk artisans always apply the production process according to standards in planning production activities, and provide raw materials so as not to hamper production activities, and always on time in the completion of work and the implementation of production activities in accordance with work instructions

Effect of Cultural quality on product quality.

In this study, the quality culture above the top five indicators is a focus on customer, employee engagement and empowerment, continuous improvement, teamwork and process management. Customer focus is measured through statement items i.e. Leaders have a good commitment related to quality planning and customer focus, Employee engagement and empowerment is measured through statement items i.e. all parties play an important role in the successful implementation of quality, and continuous improvement is measured through statement items that in producing silk fabrics required continuous improvement. And Teamwork is measured through statement items that in work have a clear work definition and done all lines in the employee. And finally process management is measured through two statement items, namely always doing training periodically for quality improvement and always trying to implement cultural changes to lead to a better direction.

While product quality is divided into eight indicators, namely performance, reliability, additional exceptionality, conformity with specifications, durability, serviceability, aesthetics, perceived quality. For performance measured through statement items, the company has a special section that handles the quality and quality of production has been in accordance with the specified or has met the standards and reliability is measured through statement items, namely silk fabric products produced are quality products and silk fabrics are reliable products, additional privileges are measured through statement items, namely silk fabric products produced have the type of material produced. Quality, adjusting to specifications measured through silk fabric quality items in accordance with the price offered, and durability is measured through statement items, namely silk fabric products produced have strong durability. And the ability to serve is measured through statement items, namely the company is able to serve consumer demand both in number and pattern. And aesthetics are measured through items that are the type of silk fabric motifs vary and silk fabric has an attractive look, and the quality perceived is measured through the item that silk fabric has an attraction that can affect the purchasing power of consumers and workers have good performance in improving their products.

Effect of quality procedures on product quality

In this study, quality procedures are above three indicators, namely periodic inspection, compliance with standard procedures, application of quality manuals. On periodic inspections are measured through three statement items, namely the creation of standard procedures related to the application of quality well and the Leader directly supervises workers to comply with established standards and work procedures and periodic supervision has been carried out with good quality application. Compliance with standard procedures is measured through statement items, namely in working has complied with standard procedures applied related to the application of quality, and in the application of quality manuals measured through statement items in work always applying continuous improvement targets to certain standards.

The test results in Table 24 showed that the quality procedure had a significant positive effect on the quality of the product with $P = 0.000 < 0.05$ with a coefficient value of 0.086, this means that the better the quality procedure, the better the quality of the product.

Effect of production process on product quality

In this study, the production process is shared above four indicators, namely Production Technology, Equipment type, type of process and flow of production process, facility layout. The type of equipment measured through statement items is to have technical standards in planning production activities. And the type of process and flow of the production process is steamed through statement items, namely before work always provide raw materials required for production activities so as not to inhibit production activities, while the type of process and flow of production processes are measured through two statement items, namely the production activities of each part are always on time in their completion and in work always perform certain methods to evaluate the production process. And the layout of the Facility is measured through statement items, namely the implementation of production activities in accordance with the work instructions given.

Based on the results of the first hypothesis research can be observed from the results of SEM analysis in Table 14 The production process has a significant positive effect on the quality of the product with $P = 0.649 > 0.05$ with a coefficient value of 0.021, this coefficient shows that the better the production process carried out has not been maximally improving the quality of the product will be better. This finding indicates that if silk artisans run the production process well it will improve the quality of production.

Effect of Quality Control on Product Quality

Quality control has a significant positive effect on product quality with $P = 0,000 < 0.05$ with a coefficient value of 0.595, this coefficient shows that the better quality control, the better the quality of the product. While quality control is divided into three indicators, namely raw material control, product quality control in production and quality control of final products. For the control of raw materials is measured through two statement items, namely always have control over the supply of raw materials and there is always control against defects in product damage. For product quality control in production is measured through three statement items, namely correction actions required to address quality problems are always held in a timely manner, the policies and maintenance procedures implemented are able to support the success of the achievement of the expected amount and quality of production, there are analytical actions and remedial actions if there is a difference between planned production activities and those that actually occur. And quality control of the final product is measured through two statement items, namely control of the quality of the product is adequate, conduct an analysis of the defective product to find out the causative factors and try to take precautions.

CONCLUSIONS

Based on the results of the data analysis, researchers can conclude with several research points. First, the results of this study show that quality culture has a significant influence on quality control, this shows that if the better the quality culture, the better the quality control. Second, quality procedures have a positive and significant effect on quality control shows that the quality procedures carried out by silk artisans in Wajo Regency, Watang Soppeng, Watampone have not been able to improve quality control while, thirdly, the production process has a significant positive effect on the Quality control, this shows that the better the production process carried out, the better quality control will be. Furthermore, the quality culture has an insignificant positive effect on the quality of this product showing that the

quality culture model applied to silk fabric artisans in Wajo, Watang Soppeng and Watanpone districts does not directly improve the quality of products well. Also, quality procedures have a significant positive effect on the quality of this product means that the better the quality procedure, the better the quality of the product.

The production process has a positive effect on the quality of this product shows that the better the production process carried out, the better the quality of the product. Finally, quality control has a significant positive effect on product quality, this shows that the better the quality control, the better the quality of the product.

SUGGESTIONS

First, Weavers should adhere to quality procedures to avoid too much product variety with the support of company leaders. Then, Weavers should also get used to producing quality products by paying attention to thoroughness, ability and creativity and always make continuous improvements. Meanwhile, the company needs to periodically carry out quality control activities and the company must develop TQM culture in the organization not only in the field of production, quality culture must be integrated functionally, involving all employees, customers and suppliers oriented to big quality in total.

To the Wajo Regency Government, Watang Soppeng Watanpone always strives for the development of the quality of silk fabric production starting from upstream to downstream by maximized the resources in each of these areas. It is recommended to the next researcher to achieve maximum research results then in the assessment of each variable use a more up-to-date measuring tool, both using the latest theory relevant to the circumstances at the research site and adding indicators of each variable with the intention of perfecting the research questionnaire.

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