

Analysis Quality Control Of Batik Products

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Abstract: The objective of this research to analyze the level of disability that occurred during 2014 and identify the factors that cause damage batik cloth at UD. Bintang Timur. The analysis is c 100% inspection and fishbone diagram. From the analysis of product quality control states damage to the product is within the control limits are set by the company, meaning that the process can be said to be controlled. However, in the graph chart control points are still fluctuating and occurs continuously while the factors that cause damage in the production process is labor, raw materials, equipment, methods and work environment. Thus it is necessary precautions to reduce or even eliminate the defective product to the next production and improvement of quality by prioritizing repairs on the type of damage that has a number of the most dominant.

Index Terms: Quality, Quality Control, C 100% Inspection, Fishbone Diagram.

1 INTRODUCTION

INDUSTRY in the world at this time there was a developing, so that the company more stringent compete in producing a quality products with the price of selling a cheap price. In addition, companies also are required to be satisfying consumers in a way to solve our customers at the right time. According to Zulian Yamit (2004:5) quality has been a hope and a dream for all people, both consumers and producers. Quality products, services cover man, process and the environment. Quality is a condition that is always changed because of what is considered to be a quality when this may be less quality in the future. Conclusion of quality is the totality characteristic form, attributes, process and the environment as described in the form goods or services, so that it was able to meet or over and consumer demand hope. Quality Control is one of the factors that determine the success or failure a business. Quality Control needed to be done as efforts to maintain product quality to standard. Products will be able known good or bad through control activities that will lead to improve quality. Besides that, with the quality control, the products to be depressed as minimum as possible disabled, so are constantly product defects that passed through to consumer can be avoided There are several techniques used in supervising the product is to use a diagram control map flawed and diagrams cause and effect. In the technique map diagram control disability can measure a quality product and can be explained in the short term, it is clear. According to Nasution (2001:108, 125), while in a technique diagram cause and effect can help to identify reasons process that has a role for the stock exchange that required by customers, with identification cause and effect, the corrective action can be done. And to help to solve the problem above, particularly the problem quality control product, need to improve the safety or production process to be done on an ongoing basis so that it could minimize defect standard of quality so that it can reach up to expectations. UD.

Bintang Timur as one of the company that produces batik cloth around the coastal areas Jember, quality control on every product that they manufacture. These companies producing various batik cloth with various motives, particularly in the batik (and materials such as, particularly in the batik (label, batik cloth semi-cap, wrote with cotton cloth materials primisima, silk, prime with pattern on it is a banana tree, like cacao, coconut trees, bamboo, rice, corn or coffee. UD. Star located on Jl. Roar No. 30 Krajan 1 Village Pakem, Sub-district Sumberjambe Jember Regency, East Java. Products that are often produced by UD. Bintang Timur are hand-made batik cloth and with cotton cloth materials Primisima, this was because hand-made batik cloth and more interested by the consumers that reach the local (Jember, Lumajang, Bondowoso, Banyuwangi, Situbondo), Solo, Malang, Jakarta, Surabaya and Bandung. Unluckily in the process of production, particularly in the batik (there is still a defect. The criteria product defects are coloring not price, the color has faded, cain shrink, cain hollow. This flawed products must be rejected because it does not comply with the standard that have been determined by a company can be relied on to satisfy the customers. Based on the background, so this research is aimed To know high defect in the process of production batik in UD. Bintang Timur in Sumberjambe Jember are in border control over or not. To know factors that would be Bad in the process of production batik in UD. Bintang Timur in Sumberjambe Jember, with a quality control use this map control flawed and diagrams cause and effect. This research is expected to become a matter Directors for the company to improve and keep on improving product quality and help in minimizing defect.

2 RESEARCH METHODOLOGY

2.1 Research Design

This research-based quantitative deskritif. According to Siti Pariani (2006:93) quantitative research that is more emphasis on data analysis and formulate definisni operation, measurements validity and high reliability. According to Subana and Sudrajat (2005:89) deskritif is a form or that inform and interpret data regarding the facts, the situation, the variable, and phenomenon that occurs when or going on and capturing it is.

2.2 Population and Sample

The population in this research is the result batik production paper produced by UD. Bintang Timur in Sumberjambe from January to Jember in December 2014. Samples in this research is a product defects that happens in each hand-made

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batik cloth and product during January until December 2014. Hand-made batik cloth and product can be said that it is broken when there is a defect, happened coloration, colors faded away, the deviation cloth size, and there is a hollow.

2.3 Type and Resource Data

Type and data source that is used in this research, is: primary data, this data is data obtained with a field survey data collection method to use all original and collected directly from its source to collect data. These individuals are called respondents with using the system interview and observation. Information obtained from the observation result is a quality standard established companies, product defects, and cause disabilities that happened during the January until October 2014. Secondary data, is data obtained from other parties data processing, strengthening primary data. Data Source secondary obtained through in this research books and literature, and a study libraries that related to this research.

2.4 Data Analyze Method

Data Processing in this research done by using tools that were found in a quality improvement. But the measures will be done is as follows:

- a. Collect data production and data flawed products using check sheet.
- b. Make Histogram.
- c. Made a c 100% inspection.
- d. A diagram cause and effect (Fish-bone diagram)
- e. The cause of the known after damage of the products, then was to draw up recommendations for the company as a course of action to improve the quality products.

3 RESULT

3.1 Check Sheet

Rapid assessment result which will be done using check sheet is shown in table 1 below:

TABLE 1
PRODUCT DEFECTS UD. BINTANG TIMUR JEMBER IN 2014.

Month	Number of Batik Cloth Products	Type Disabled				Number of Product Defects
		Color does not Price	Color Blur	Cain Shrink	Cain Hollow	
January	210	3	1	5	2	11
February	247	1	3	2	4	10
March	263	2	2	2	2	8
April	250	3	4	1	1	9
May	278	2	3	3	2	10
June	300	3	2	1	2	8
July	213	2	0	0	3	5
August	270	1	1	2	3	7
September	286	3	1	1	1	6
October	213	2	1	0	0	3
November	222	4	0	0	1	5
December	230	2	1	0	1	4
Total	2982	28	19	17	22	86

Source: UD. Bintang Timur Jember

3.2 Histogram

Histogram are made based on data production April 2014 is shown in the figure 1 below:

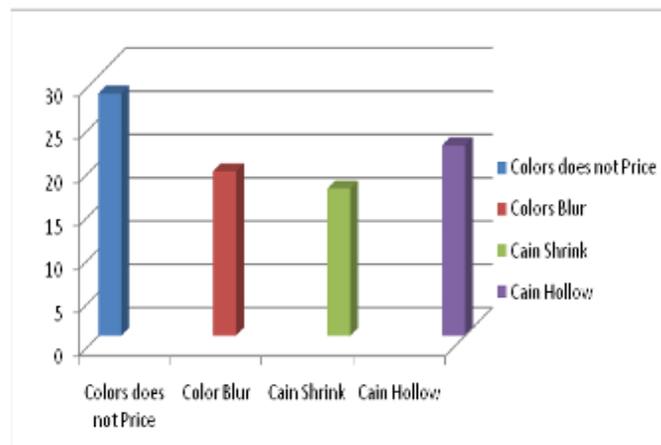


Fig. 1. Histogram defective products UD. Bintang Timur in 2014.

3.3 C 100% Inspection

To make maps control c is as follows:

- A. Calculate the percentage damage

Data processing result using Microsoft Excel is shown in table 2 below:

TABLE 2
PERCENTAGE PRODUCT DEFECTS

Month	Number of Batik Cloth Products (Pieces)	Number of Product Defects (Pieces)	Percentage Defect (%)
January	210	11	5.24
February	247	10	4.05
March	263	8	3.04
April	250	9	3.6
May	278	10	3.6
June	300	8	2.67
July	213	5	2.35
August	270	7	2.59
September	286	6	2.1
October	213	3	1.41
November	222	5	2.25
December	230	4	1.74
Total	2982	86	2.88

Source: Counting Product Defect UD. Bintang Timur

From the table 1 can be counted:

- B. Counting average production

$$a = \frac{\text{Total Production}}{\text{Month}} = \frac{2982}{12} = 248,5$$

- C. Calculate price defect

- D. Counting exposes a maximum and minimum

$$UCL = \bar{c} + 3\sqrt{\bar{c}} = 7,17 + 3\sqrt{7,17} = 15,203$$

$$LCL = \bar{c} - 3\sqrt{\bar{c}} = 7,17 - 3\sqrt{7,17} = -0,86$$

Because of the result of LCL is -0.86 LCL to 0

After getting the average defect, Upper Control Limit and Lower Control Limit, then was made a C 100% Inspection use minitab 15. Counting result and the making C 100% Inspection

use minitab 15 shown in the fig 2 below:

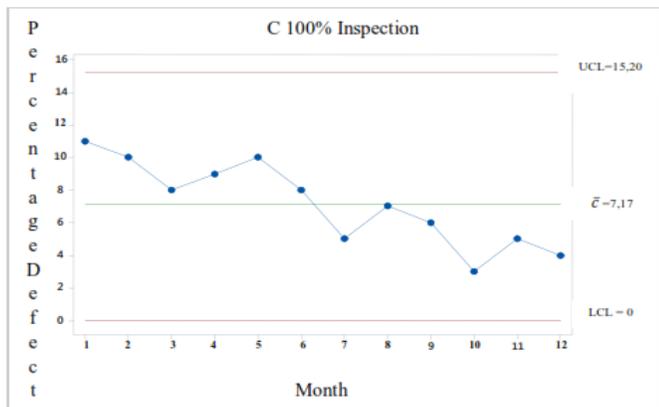


Fig. 2. C 100% Inspection UD. Bintang Timur with Minitab 15 in 2014

Counting result control map C 100% Inspection that damage of the products will be in border control that established companies, it means that the process is moderating. But, in map graphics control point still fluctuate and start all over again. So, if this was left to be dealt with by occurs, it will cause a loss for the company. Therefore, it have to be done analysis of the diagram cause and effect to know why corruption that happened so that they can overcome this problem.

3.4 Diagram Cause and Effect (Fish-bone Diagram)

Diagram cause and effect is used to analyse factors causing the damage of the products. According to Rudy (2012: 102) there are factors that affect damage of the products in general can be classified among others: Man (human) , the workers that are directly involved in the process of production. *Material* (raw materials), all the components that are used for producing products both the main raw material and a maid raw materials. *Method*, command procedures work in the process of production. *Environment* (environment), the circumstances where production that may affect production process both directly and indirectly. The following is a diagram use cause and effect for the color, color has faded, cain shrink, cain hollow:

a. Color does not Price

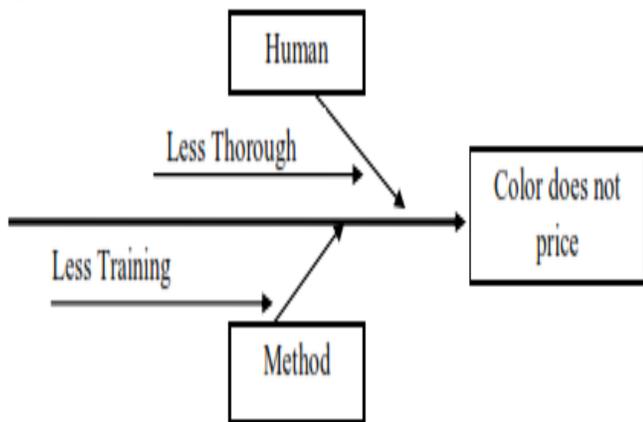


Figure 3 Diagram cause and effect colors not Price

The cause of the color that does not hand-made batik cloth and evenly in caused by the workers slipshod when doing process coloration, causing cain did not terwarna with perfect batik motifs, there is a part that has not been became paganized. In addition, other factor that became the cause color does not price is less training about coloring is good and right hand-made batik cloth and on, and thereby cause hand-made batik cloth and color is not smooth.

b. Color Blur

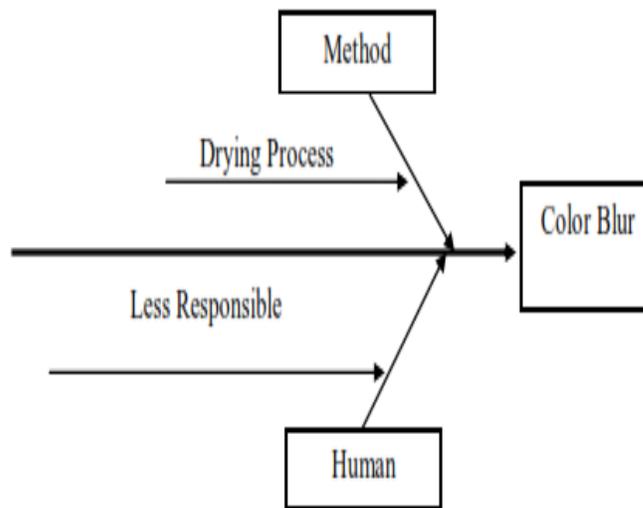


Figure 4 Diagram cause and effect colors blur

The cause hand-made batik cloth and color of the employees bluring is responsible for checking and turning batik cloth that is in the stage drying process. Because batik cloth when on an ongoing basis is dried under he was just tricked endlessly without the sun's rays behind it will cause colors blur away.

c. Cain Shrink

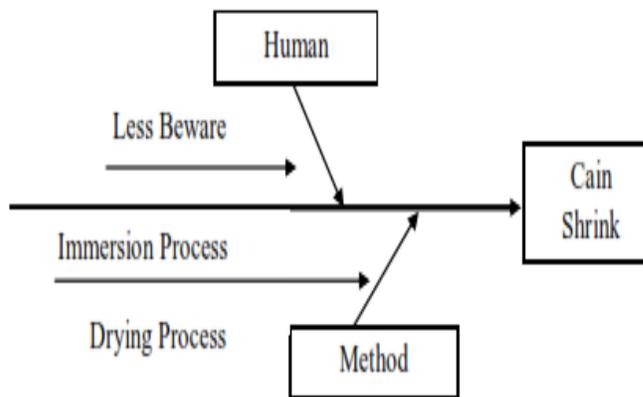


Figure 5 Diagram cause and effect of cain shrink

Not careful enough Employee when arranging the heat in the water like a colored dyes, so when dye in the process dyeing cloth soaked in it will experience depreciation. In addition the Sun's heat can cause hand-made batik cloth and color fading emerges, also can cause cain shrink, particularly in the batik (leave when employees are constantly paper under the sun's rays to dry without any checking repeat the process drying. Hand-made batik clothes, signaling that waning cloth size

perpotongnya also decreases and not in accordance with the size that meet the standard.

d. Cain Hollow

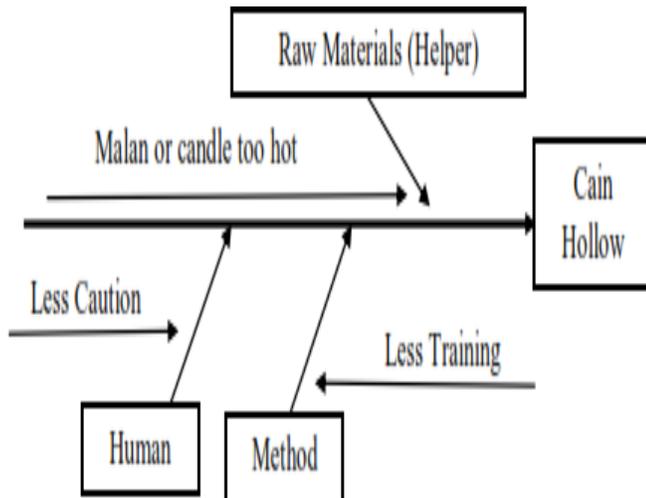


Figure 6 Diagram cause and effect cain hollow

Excessive heat the night to the raw material or candles used during the process pencantingan can cause cain was a hollow. The lack of appropriate training, followed by the employees of the size temperature fire when the night warming or candles. That can cause the workers not careful enough to process pencantingan that can cause cain was a hollow.

3.5 Recommendations Quality

Next step after knowing the cause of the defect on hand-made batik cloth and product UD. Star Sumberjambe Jember is drawing up a proposed action improve in general in an effort to reduce high hand-made batik cloth and product defects.

a. Action on Improving for color does not Price

The employees involving the training specifically about coloring batik so that the workers can be far more carefully stage coloring in the pattern each hand-made batik cloth and on and to reduce coloration not price that was caused by human error.

b. Action on Improving for color blur

Getting to every employee to be responsible for each of their performance in every part. Should always do checked, hand-made batik cloth and turning back the drying process. Add extra facilities or additional to expose to drying and hand-made batik cloth and so that in this phase, particularly in the batik (drying colors did not tarnish because too long and he was just tricked endlessly not when they were in heat under the sun, which is directly.

c. Action on Improving for Cain Shrink

Should be very careful to manage the heat and water in like when doing process immersion, particularly in the batik always checked the drying, and make a roof in the drying that do not experience depreciation because it was too long are under heat the sun that is directly.

d. Action on Improving for Cain hollow

The employees were given the opportunity to take part in the

training about a big or small fire when global warming candles or the night that used during the batik process so that the workers to be careful more know and at the time the disbursement raw materials for help in the batik process that can cause cain was a hollow.

4 DISCUSSIONS

Batik Labako UD. Bintang Timur Sumberjambe is one of the industrial company perbatikan that is in Jember always required to produce quality products. To fulfill quality standard products quality control always have to be done by the company. Quality Control will be done to material which will be used, production process and final result. Customer satisfaction with hand-made batik cloth and to the product is the main key produced a successful implementation quality itself. Therefore, in order to provide high quality products company must apply production system that are appropriate and systematic; that is, by applying quality control to product that produced by a company. *Statistical Process Control* is a statistical tools that can be used to control the product can also find out what kind of these kinds of mischief and take action to reduce number of products were damaged. (Heizer and Render, 2006:286). After a thorough observation and data collection during the research, the result of the recapitulation map control c 100% *Inspection* that damage of the products will be in border control that established companies, it means that the process is moderating. But, if this was left to be dealt with by occurs, it will cause a loss for the company. From the analysis of using *Statistical Process Control* that will be done in this research can be known type of damage of the products and factors that cause damage. In general factor of disability due to human factors, the method, raw material, and the environment. Types of defects that most of it, which is color does not as many as 28 hand-made batik cloth and cut sheets, the main cause of the occurrence of color that does not hand-made batik cloth and spread evenly in caused by the workers slipshod when doing process coloration, resulting in a garment not color with perfect batik motifs, there is a part that has not been became propagandized. In addition, other factor that became the cause color does not price is less than in the training about coloring is good and right hand-made batik cloth and on, and thereby cause hand-made batik cloth and the color is not smooth. This research is supported with the research done by Nusa Dua Muktiadji and Lukman Hidayat (2006) that the Applicants said a causative factor that one of the product is broken factor of the man, where all employees slipshod in work, coaching who lack any sense plus less responsibility in work. Number of votes that have been crippled the cloth holes as many as 22 hand-made batik cloth and cut sheets, heat that too much on the night or candles used during the batik process can cause cain was a hollow. The lack of appropriate training, followed by the employees of the size temperature fire when the night warming or candles. That can cause the workers not careful enough to batik process that can cause cain was a hollow. This research is supported with the research done by Umi Tyasih, Bambang Pramudya, and Hartrisari Hardjomidjojo (September, 2007) that have something that dietary factors for disabled types of products that holes on the product batik cloth due to the fact that the use of equipment manual with a limited lack of quiet work skills, particularly in the batik (in the process of making a causative factor is one of the product of the occurrence of a hollow from. Types of disability third that have been crippled

the colors faded away as many as 19 hand-made batik cloth and cut sheets, the main cause hand-made batik cloth and color of the employees fading is responsible for checking and turning batik cloth that is in the stage drying process. Because batik cloth when on an ongoing basis is dried under he was just tricked endlessly without the sun's rays behind it will cause colors fade away. This research is supported with the research done by Nusa Dua Muktiadji and Lukman Hidayat (2006) that the Applicants said a causative factor that one of the product is broken factor of the man, where all employees slipshod in work, coaching who lack any sense plus less responsibility in work. Type of disability at least a smaller group that cain shrank as much as 17 hand-made batik cloth and cut sheets, the Employee not careful enough when arranging the heat in the water like a colored dyes, so when dye in the process dyeing cloth soaked in it will experience depreciation. In addition the Sun's heat can cause hand-made batik cloth and color fading emerges, also can cause cain shrink, particularly in the batik (leave when employees are constantly paper under the sun's rays to dry without any checking repeat the process drying. Hand-made batik clothes, signaling that waning cloth size one pieces also decreases and not in accordance with the size that meet the standard. This research is supported with the research done by Saufik Luthfianto (2014) that his research shows that factors in the power immersion significant advantages and extend cain because *setting optimum level* of high quality design result as a basis for the improvement of the quality products batik is in batik cloth materials used by immersion primisima, coloring during 50 minutes. Analysis of that has been done by using flawed control map and diagram for a consequence of this company's outlooks for able to open to control the process of production at every stage with precision, to increase its production quality control in total that will continuously stronger that high quality products by pressing damage to as low as possible, because after data collection and observation spots during the research into the map disabled control at UD. Bintang Timur still fluctuate and continuous. When it was left to be done on an ongoing basis there so it will cause a loss to UD. Bintang Timur.

5 CONCLUSION

Based on the result data analysis and discussion of Batik Labako UD. Bintang Timur Sumberjambe conclusion, as follows:

- a. Counting result control map disabled that damage of the products will be in border control that established companies, it means that the process is moderating. But, if this was left to be dealt with by occurs, it will cause a loss for the company. Therefore, it have to be done analysis of the diagram cause and effect to know why corruption that happened so that they can overcome this problem.
- b. Analysis of data using a diagram cause and effect can be known factors that cause the occurrence of disability in the process of production is a man, working method, raw material, and the environment. But the human factor becomes the main cause is that affected the defect because the production process is done manually.

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