QUALITY CONTROL ANALYSIS ON PRODUCTION PROCESS OF GARMENT AT GOLDEN FLOWER LLC UNGARAN

Kevin Naufal Nadhif [1], Amie Kusumawardhani [2]
kevinnaufal98@gmail.com

Management IUP, Faculty of Economics and Business, Diponegoro University Semarang
Jl. Prof. Soedharto SH Tembalang, Semarang 50275, Phone: +622476486851

ABSTRACT

The aim of doing this study is to analyze how the implementation of quality control at PT. Golden Flower Ungaran in an effort to control the level of product damage. The data was collected by interviewing, observing, and documenting, followed by processing it using the Statistical Quality Control method. includes filling in the examination sheet, making histograms, making Pareto diagrams, making and calculating control charts, making causal diagrams. The results of this study indicate that the types of damage that occur in garment production are caused by Broken stitch, Skipped stitches, Obras oblique / untidy, Ironing and Dirty. From the cause-and-effect diagram, it can be seen that the factors that cause product damage are derived from material factors, machines, methods and employees. The use of the p control chart shows that the product quality control process is still outside the control limit because there are still four points that are outside the upper control limit and the lower control limit, thus indicating that the quality control process has not been carried out properly.

Keyword : Quality Control, Statistical Quality Control method, garment industry

INTRODUCTION

Good quality products will be produced from a proper process and in accordance with quality standards that have been determined based on market demands. Goods can be said to be of quality if they are in accordance with product quality standards set by the company. Each production process has the probability to manufacture products that are not in accordance with quality standards. Products that do not comply with these standards can be considered as damaged / defective products which cannot be directly distributed to the market but must go through a sorting or repair process first. Defective products are goods or services that are made in the production process but have deficiencies that cause the quality to be poor or imperfect. According to Hansen and Mowen (2011), defective products are products that do not have specifications. There are several elements that cause the resulting product is not in accordance with the standards namely, human resource, machinery, methods, raw materials, and the environment factors. To achieve product targets with quality assurance, quality control is an activity is a necessity in every production activity because the quality of goods or services produced by the company is a reflection of the success of each company in the eyes of the public. If the quality of goods or services produced is poor, consumers will immediately know that the company that produces the product is poor likewise. But if the quality of goods produced is satisfying, then consumers will directly grant a good value for the company.

Minimizing defects is an effort that must be carried out continuously in terms of improving the quality of a product. Therefore, it is very important for companies to implement one of the methods of controlling and improving quality that can help trim defects in manufacturing apparel products. One of many methods used for quality improvement and control is Statistical Process Control (SPC) (Kartika, 2013). Where the quality of the production process is controlled from the start of production, when the production process lasts until the finished product. Before being

thrown into the market, products that have been produced are first inspected, where good products are separated from defective products so that the number of products produced is reduced.

Golden Flower LLC Ungaran is a company engaged in garment business, market demand for production is vast such that Golden Flower LLC Ungaran always strive so that its production can be reinforced with the quality as expected, but in reality there are still products that are of below standard or defective. If the company still maintain current production results, this is very detrimental to the company, because it can result of waste in production, take time to repair, and of course this will disappoint the consumers if the defective product reaches them. The effect of defective products on the company has an impact on quality cost, company image, and customer satisfaction. The more defective products produced, the greater the quality costs incurred. This based on the higher quality costs incurred on defective products then the preventive or fixing action such as, inspection, rework, and so on will appear. Likewise, the higher the defective product, the company's image will go down, this because consumers judge a company sby quality goods produced and gives satisfaction to consumers said to be a good one, and if consumers find the products produced are less satisfactory, then the company will be judged to be less good by consumers and the impact will be on consumers distrust in their products. To overcome the problems above,there is a need for an appropriate method to find the root of the causes of product defects to reduce the level of product defects at Golden Flower LLC Ungaran.

LITERATURE REVIEW
Quality Control

Quality control, according to Montgomery (2013), Quality control and improvement involve the set of activities used to ensure that the products and services meet requirements and are improved on a continuous basis. Since variability is often a major source of poor quality, statistical techniques, including SPC and designed experiments, are the major tools of quality control and improvement.

Meanwhile, according to Gasperz (2014), "Quality control is the operational techniques and activities used to fulfill requirements for quality." This means that quality control is an operational technique and activity used to meet quality requirements.

To obtain good quality control results, the quality control of a product can be executed using quality control techniques in order to get production results that are in accordance with established standards. There are several types of control methods that can be described as follows:

1. Inspection
   According to Heizer & Render (2014) inspection is a way to ensure production produces the expected quality. The purpose of inspection is to detect bad processes as soon as possible. Inspections only find flaws and product defects.
2. Quality Control
   Statistical quality control (SQC) is quality control using qualitative and quantitative data. According to Mayang (2015: 16) "Statistical Quality Control (SQC) is a system developed for maintain uniform standards of the quality of production, at the minimum cost and implement assistance to achieve efficiency."

Statistics Processing Control (SPC)

Statistical Processing Control is a statistical technique that is widely used to ensure that processes meet standards. In other words, it is a process used to monitor standards, make measurements and take corrective action while a product or service is being produced (Render and Heizer, 2014). According to Smith (2013) "Statistical Process Control is a collection of production methods and management concepts that can be used to obtain efficiency, productivity and quality to produce competitive products at the maximum level, where Statistical Process Control involves the use of statistical signals for to improve performance and to maintain control of production at higher quality levels. " Another definition of Statistical Process Control in the opinion of Gasperz (2014) is a term that has been used since the 1970s to describe the use of statistical techniques in monitoring and improving process performance to produce quality products.

Statistics Quality Control (SQC)

Basically, SQC is the use of statistical methods to collect and analyze data in determining and monitoring the quality of production results. Statistical quality control is a problem-solving technique used to monitor, control, analyze, manage, and improve products and processes using statistical methods. Statistical Quality Control is a statistical method that applies probability theory in testing or checking samples in quality control activities of a product.

According to Render and Heizer (2014) quality is never an accident, quality is always the result of effort. Seven tools introduced in the quality control business are:

1. Check Sheet
   Check Sheet or inspection sheet is a data collection and analysis tool that is presented in table form which contains data on the number of goods produced and the types of discrepancies along with the amount produced. The purpose of using this check sheet is to simplify the process of data collection and analysis, and to find out the problem areas based on the frequency of the type or cause and to make a decision to make improvements or not. The implementation is carried out by recording the frequency of appearance of a product's characteristics regarding its quality.

2. Scatter Diagram
   Scatter diagram or also called correlation map is a graph that displays the relationship between two variables whether the relationship between the two variables is strong or not, namely between the process factors that affect the process with product quality. Basically, the scatter diagram is a data interpretation tool used to test how strong the relation between two variables is and determine the type of relationship between the two variables, whether positive, negative, or no relation.

3. Cause and Effect Diagram
   This diagram is also called a fishbone chart and is useful for showing the main factors that affect quality and have an effect on the problem being studied. In addition, we can also see more detailed factors that have an effect and have an effect on these main factors which we can see in the arrows in the form of fish bones in the fishbon diagram.

4. Pareto Chart
   Pareto chart were first introduced by Alfredo Paretodan used first by Joseph Juran. Pareto chart are bar charts and line graphs that illustrate the comparison of each type of data to the whole. The function of the Pareto chart is to identify or select the main problem for quality improvement from the largest to the smallest.

5. Flowchart / Process Diagram
   Flowchart graphically show a process or system using squares and two interconnected lines. This diagram is quite simple, and it is a superb tool to understand a process or explain the steps of a process.

6. Histogram
   Histogram is a tool that helps to determine variations in the process. Bar chart in the form of tabulation of data arranged according to size. This data tabulation is commonly known as frequency distribution. The histogram shows the characteristics of the data which are divided into several classes. Histograms can be in the form of "normal" or shaped like a bell that shows that a lot of data contained in the average value. The oblique or asymmetrical shape of the histogram shows that much data is not at its average value but most of the data are at the upper or lower limit.

7. Statistical Process Control (SPC) chart
   the statistical process control chart is a tool that graphically is used to monitor and evaluate whether an activity / process is in quality control statistically or not so that it can solve problems and produce quality improvements. The control chart shows changes in data from time to time, but does not indicate the cause of the deviation even though the deviation will be seen on the control map.

RESEARCH METHODS

The research method used in this research is descriptive and analytical methods. The object of this research is PT. Golden Flower Ungaran at *Jl. Karimunjawa, Desa Gedang Anak Ungaran*. The reason for choosing the location as the object of research is that the Company still has problems in the case of defect products so that it can be used as an object of research on quality control issue. Data used in this study are Production data and data on the number of defects data from January 2020 to march 2020.

Quality measurements at Golden Flower LLC uses Five product characteristics that are considered defective, i.e : Broken stitch, Skipped stitches, Obras oblique / untidy, Ironing & Dirty. Therefore, the type of damage recorded is the most dominant type of damage produced. Attribute quality measurements are carried out using the p chart. The control chart p is used to analyze products that are experiencing defects and cannot be repaired any more than products produced by Golden Flower LLC. P control chart is used in attribute quality control, which is to present defects or defective in the product produced and to find out whether it is still within the standard.

In processing the data obtained, statistical tools are used in the Statistical Quality Control (SQC) and Statistical Process Control (SPC). The steps are as follows:
1. Collecting data utilizing check sheet
2. Make Histogram
3. Make *p*-chart
4. Make a Pareto diagram.
5. Look for causal factors with fishbone diagram.
6. Make suggestions for improving the quality of production

RESEARCH RESULTS AND DISCUSSION

The garment company Golden Flower LLC Ungaran was founded in 1989 on a land area of 2.5 hectares. Golden Flower LLC Ungaran started operations in August 1990. The head office of Golden Flower Tbk is located at Jl. Karimunjawa, Ex. Gedanganak, Kec. East Ungaran, Kab. Semarang, Central Java 50519 - Indonesia. Shareholders owning 5% or more shares of Golden Flower LLC, namely: Profashion Apparel LLC, with an ownership percentage of 80.00%. The amount of production of Golden Flower LLC Ungaran changes every month, this is due to the difference in the number of working days. In addition, there was also a change in demand for garment products received by Golden Flower LLC Ungaran. The products produced are garments of various types marketed abroad and domestically. The types of garments produced include t-shirts and shirts.

At Golden Flower LLC Ungaran working hours are valid Monday to Saturday with provisions from 07.45 to 17.00 for Monday, 07.45 to 16.00 for Tuesday to Friday and 07.45 to 12.00 for Saturdays, with one-hour break from 12.00 to 13.00 every Monday to Friday. On Sundays and national holidays, employees are closed. In addition, overtime work is done outside the official working hours that apply. With increasing growth, until now Golden Flower LLC Ungaran has employed a total of 762 employees, which are divided into permanent employees, monthly employees and odd jobs.

Research result

Findings of the data collection conducted in January to March 2020 will be discused in this chapter, the following quality control analysis steps are carried out:
1. **Check sheet and histogram**

   Check Sheet is presented in the form of a table containing the type of defect and the number of each defect. For the full checksheet calculation results can be seen in table 1

Table 1. Check Sheet

Month	week	n	np	p	UCL	CL	LCL
January	1	3610	413	0,1144	0,1119	0,0971	0,0823
	2	3100	250	0,0806	0,1130	0,0971	0,0811
	3	3230	259	0,0802	0,1127	0,0971	0,0814
	4	2470	219	0,0887	0,1149	0,0971	0,0792
February	5	3630	353	0,0972	0,1118	0,0971	0,0823
	6	3050	304	0,0997	0,1131	0,0971	0,0810
	7	2460	252	0,1024	0,1150	0,0971	0,0792
	8	2790	269	0,0964	0,1139	0,0971	0,0803
March	9	3020	280	0,0927	0,1132	0,0971	0,0809
	10	2949	273	0,0926	0,1134	0,0971	0,0807
	11	2250	263	0,1169	0,1158	0,0971	0,0783
	12	3560	371	0,1042	0,1120	0,0971	0,0822
TOTAL		36119	3506				

Defective product data is presented in the form of a block graph divided according to the type of defect, which is presented in Figure 1

Figure 1 Histogram
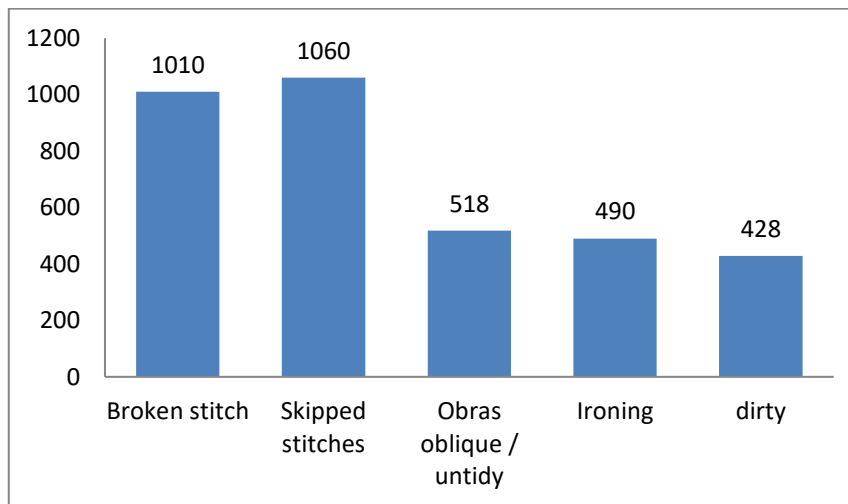
2. P-Chart

Data taken from Golden Flower LLC Ungaran, namely quality control as measured by the number of final products. Measurements were made with P Chart type Statistical Quality Control on the number of garments produced during January to March 2020 for garments amounting to 36,119 pieces of clothes, and found defective products total of 3,506 pieces of clothes. From these data, the mean (CL) or average of the final product is calculated. The following is the measurement sheet by taking samples from January to March 2020 to determine the UCL (Upper Control Limit) and LCL (Lower control Limit) values for garments. Based on the results of the calculation of table 1 above, then the p-chart can be made which can be seen in Figure 2.

Figure 2 P-Chart
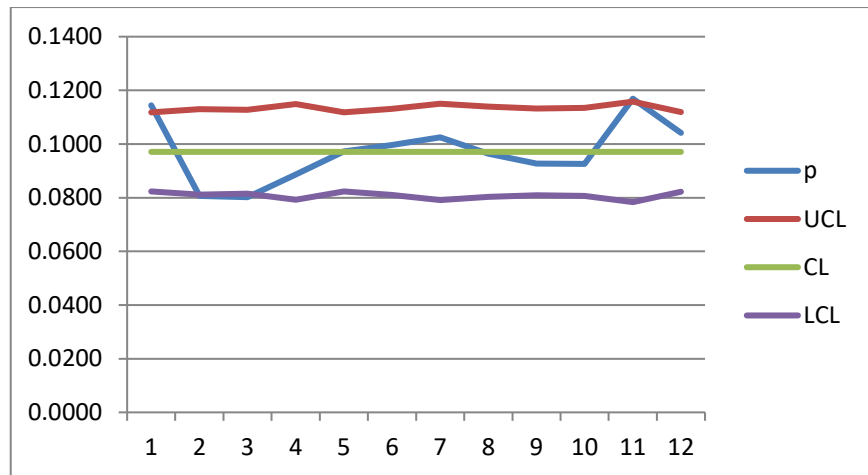
Because P is mostly between UCL and LCL, the process capability is running well, so that it is able to explain that the process capability is able to meet the desired tolerance limit specifications, but there needs to be strict control because there are some samples that are above UCL. Based on the picture above, it can be explained that the P-Chart for the garment shows that there are four period points located above the UCL and below the LCL which means out of control

3. **Pareto Diagram Analysis**

Table 2 Calculation of damaged products

Month	Minggu	Total	A	B	C	D	E
January	1	413	130	121	56	58	48
	2	250	75	76	37	37	25
	3	259	76	82	37	35	29
	4	219	63	64	31	33	28
February	5	353	101	108	52	50	42
	6	304	87	93	46	42	36
	7	252	72	70	44	34	32
	8	269	79	84	42	34	30
March	9	280	80	88	41	38	33
	10	273	71	83	39	40	40
	11	263	73	80	39	36	35
	12	371	103	111	54	53	50
TOTAL		3506	1010	1060	518	490	428

Description
A : Broken stitch
B : Skipped stitches
C : Untidy overlock stitches
D : Ironing
E : Dirty

Based on the data above, it can be explained as follows:
a. Broken stitch
   The initial and final stitching processes are not connected at the same point as each other. Sewing threads often break as a result; the mismatch of fabric with thread count, needle number or thread tension or thread quality is not good.
b. Skipped stitch
   Skipped stitch defects are caused by wrong needle size, blunt needles, and lack of lubrication on the sewing machine, so the stitch results are sparse and do not meet standards.
c. Untidy overlock stitches
   This untidy overlock causes a change in the texture or pattern of the fabric.
d. Ironing
   The pocket cannot be ironed evenly. Darts does not iron well. Buttons or studs are damaged by the heat of the iron. The fabric burns or melts due to the iron temperature too high. Flex or mold stains due to water impact appear after finishing the ironing process. The position of the clothes to be ironed is not properly adjusted so that affects the appearance of the clothes.
e. Dirty The dirty cloth on the product of this clothing is in the form of a cloth that has dirty stains such as engine oil and others

The data that is processed to determine the percentage of damage is calculated by the formula:

$$\% \text{ Damage} = \frac{\text{Number of Damage Types}}{\text{Number of total Damages}}$$

Damage to broken stitches was 1010 pieces :

$$A = \frac{1010}{3506} \times 100\% = 28{,}81\%$$

Damage to the skipped stitches of 1060 pieces :

$$B = \frac{1060}{3506} \times 100\% = 30{,}23\%$$

Damage to untidy overlock stitches of 518 pieces :

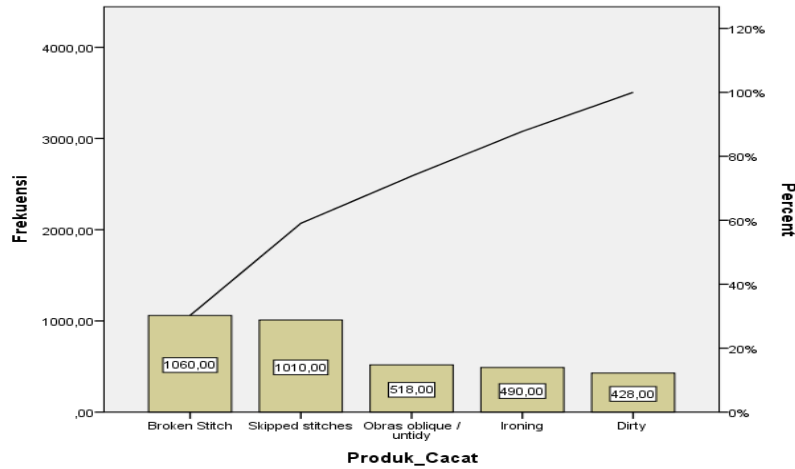$$C = \frac{518}{3506} \times 100\% = 14{,}77\%$$

Ironing damage of 490 pieces :

$$D = \frac{490}{3506} \times 100\% = 13{,}98\%$$

The Dirty clothes of 428 pieces :

$$E = \frac{428}{3506} \times 100\% = 12{,}21\%$$

The calculation results can be illustrated in the Pareto diagram shown in the following figure:

Figure 3 Pareto chart

4. Cause and Effect Diagram Analysis

The cause and effect diagram shows the relationship between the problems faced and the possible causes and the factors that influence them. The factors that influence and cause product damage in general can be classified as follows:

a. Man (Employee)

   The employees who do the work involved in the production process.

b. Material (raw material)

   Everything that is used by the company as a component of the product to be produced.

c. Equipment (machine)

   The equipment used in the production process is sewing machines, overlock machines and irons.
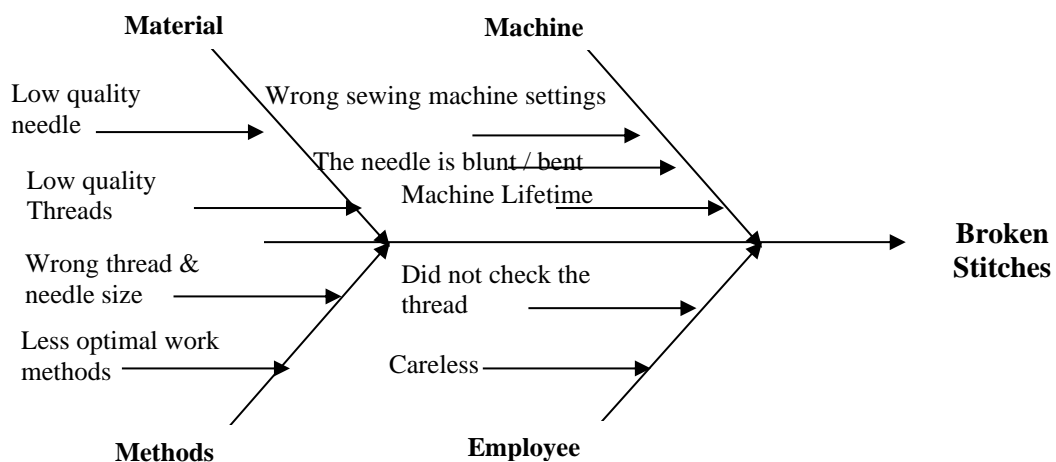
d. Method (method)

   Work instructions or work orders to be followed in the production process

After identifying the types of defects that have occurred, it is necessary to take corrective steps to prevent similar defects. The important thing that must be done and traced is to find the cause of the defect. As a tool to find the cause of the disruption, a cause and effect diagram is used, or what is called a fishbone chart. As for the use of cause and effect diagrams to trace each type of defect that occurs.
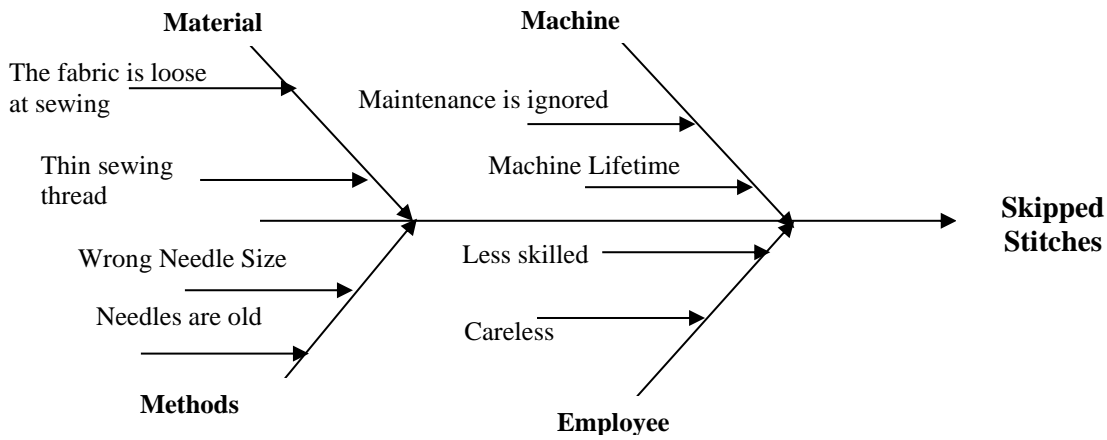
a. Broken stitch

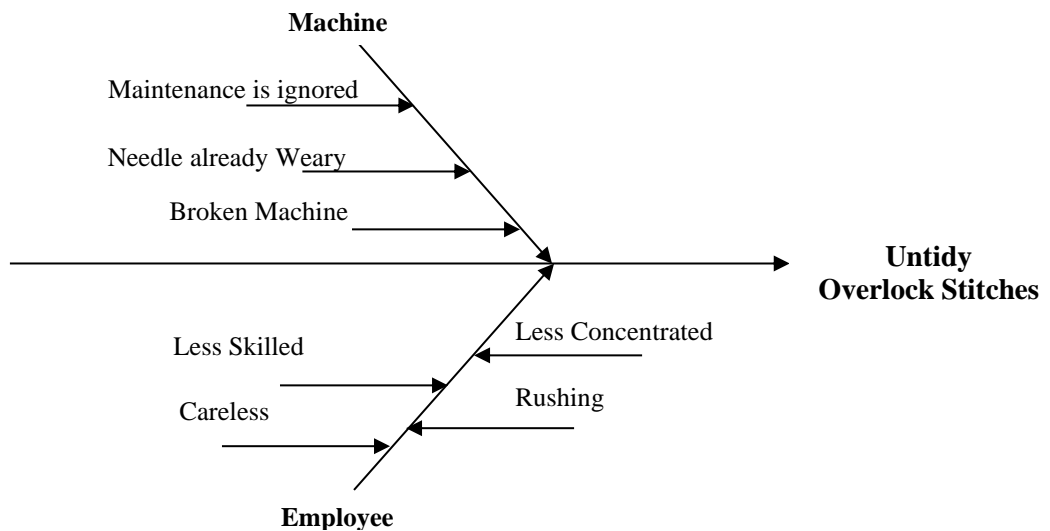Figure 4 Cause and Effect Diagram for Broken Stitch Types

b. Skipped stitches –all types of stitches

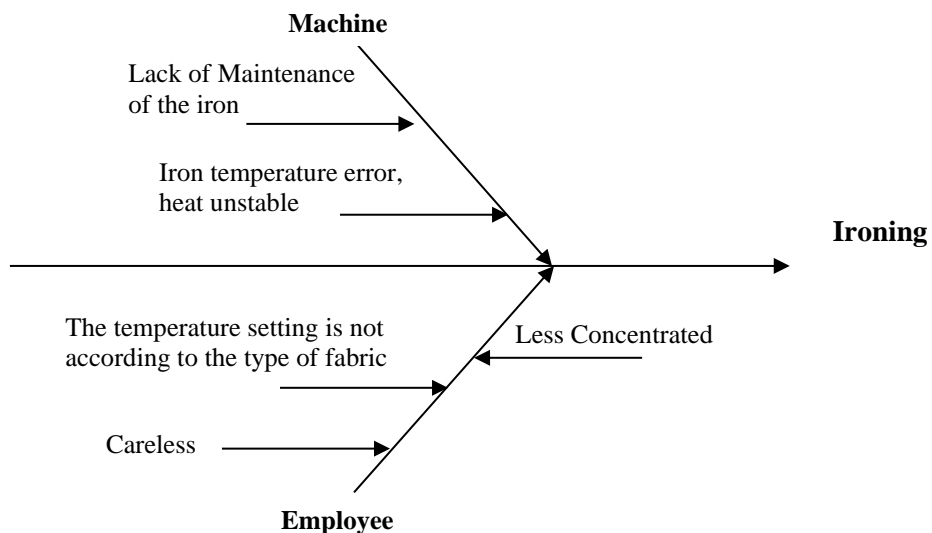Figure 5 Cause and Effect Diagrams for Skipped Stitches

Material

The fabric is loose at sewing

Thin sewing thread

Wrong Needle Size

Needles are old

Methods

Machine

Maintenance is ignored

Machine Lifetime

Less skilled

Careless

Employee

Skipped Stitches

c. Untidy overlock stitches

Figure 6 Cause and Effect diagram for Untidy Overlock Stitches

Machine

Maintenance is ignored

Needle already Weary

Broken Machine

Less Skilled

Careless

Less Concentrated

Rushing

Employee

Untidy Overlock Stitches

d. Ironing

Figure 7 Cause and Effect Diagram for Ironing

Machine

Lack of Maintenance of the iron

Iron temperature error, heat unstable

The temperature setting is not according to the type of fabric

Less Concentrated

Careless

Employee

Ironing

e. **Dirty**

Figure 8 Cause and Effect Diagram for Dirty Clothes

Material   **Machine**

There is dirt on
the cloth

Lack of maintenance on
the machine

Exposed to sewing
machine oil

Did not check machine
hygiene

Dirty

Careless

Employee
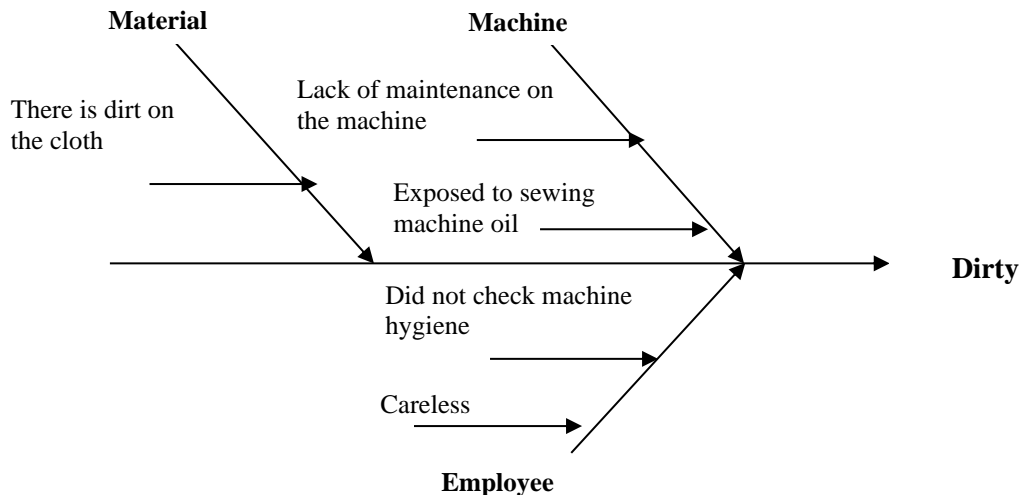
5. **Production improvement recommendations / suggestions**
   Stages of improvement are carried out by providing solutions to problems that cause defects in garment products. Based on the results of the analysis, there are several factors that cause disabilities, due to material factors, machine / equipment factors, method factors and employee factors. Based on the results of the observations and analysis carried out, there are several things that must be proposed for improvement in order to get maximum results, so as to reduce the level of product defects. The proposed improvements are as follows:

a. **The sewing machine that had a slight failure was still operating**
   1) Make a sewing machine service schedule regularly in a year. Ideally, sewing machines are serviced at least 2x a year.
   2) The production department, assisted by the supervisor, conducts routine data collection on the condition of the sewing machine every day.
   3) The company conducts special training for operators regarding sewing machine parts, especially parts in machines and their maintenance.
   4) The company provides special technicians to maintain sewing machines.

b. **The operator waits for the needle to break first.**
   1) Provide a replacement needle holder in each operator's work station that uses sewing needles
   2) The production department establishes clear schedules and rules for changing sewing needles. This is done by collecting data on the number of times the needle breaks in each jeans production process at each work station that uses sewing needles. Then an average value is taken from each work station to determine when the needles should be replaced before they break.

c. **The operator is exhausted**
   1) The operator rest interval plus the original only ± 5 minutes after carrying out the checking process and fabric pattern for one pile of denim fabrics is ± 10 minutes, thus allowing the operator to recover from fatigue better.
   2) Adding a new operator for the pattern section and checking the fabric, so that the old operator is assigned only to the fabric cutting process.

d. **The operator lacks concentration**
   1) The chalk dust from the fabric pattern is cleaned immediately for every one heap of denim fabric is finished.
   2) Provide a special table to accommodate the pieces of cloth, so that they are not placed on the same table. Which can affect the concentration of operators in the process of patterning and checking fabrics.

e. Less skilled operators

1) Training of new operators by senior operators is carried out not during production hours so as not to interfere with the work being done by other operators.
2) The training method is carried out with a sewing course approach.
3) The recruitment of new operators is tightened with a minimum sewing experience limit of more than 1 year.

f. Raw material

The raw materials that have been used are sometimes the type of fabric that is difficult to sew. In addition, there are some fabrics that are easily damaged. Sometimes there are fabrics that have many patterns so that the cutting has to be adjusted accordingly. To solve this problem, for the types of fabrics that are difficult to sew. Best if there is an order from the buyer, negotiate for the type of raw material to be used for fabric that is easily sewn and does not tear easily. In addition, if the raw material is easily torn, give notification to the production department and warehouse so that they are more careful in handling and treatment during the production process.

g. Machine

Machines are the main equipment in the production process. In the event of a serious problem with the machine, the production process must be stopped for a while to be repaired and if it turns out that the damage to the machine is severe, the production process must be stopped for a long time. The occurrence of machine failure can delay the production process resulting in waste of time, energy and costs. The occurrence of blackouts for machine use can have fatal consequences, inevitably the production process has to stop right away. To solve this problem, the company should take serious and periodic maintenance to the machines used in the production process. Machine maintenance should be carried out by employees who are expertized in machine, so that severe damage can be resolved fast and properly. The company should also provide another spare machine, so when the machine breaks down, the replacement machine can be used. To overcome the blackout, the company should coordinate with the National Electricity Company (PLN) or provide an adequate generator.

h. Employees / Labor

For the Employee, concentration and experience are the main factors to support the success of the production process. Tired employees and lack of concentration are caused by the large number of production orders so that employees must work fast and sometimes they have to work overtime. Tired employees and lack of concentration causes the production process to occur a lot of damage. Lack in discipline resulting lazy employees, so the work is not done properly. Lack of experience regarding the production process and understanding of the design of clothing products will cause damage because employees do not understand the methods used. To solve this problem, the company should give time off or vacation to production employees, so employees feel ready to work again. In addition, at the time of recruitment, employees who are experienced in their respective fields should be selected.

i. Method

The quality control method in the production process used by the company is well, but the implementation is not proper, because the Final Quality Control is only found in finishing by the buyer before the goods are shipped. Judging from the fabric checking which is only done randomly by a warehouse supervisor using a cloth inspection machine. In addition, the supervision of distribution from warehouse to cutting then to sewing is less so that it allows errors in materials / accessories to be used. To overcome this, companies should always supervise the implementation of quality control methods on raw materials in warehouses and the distribution of raw materials to each department is more tightened and recorded so that clear data is obtained and used as a reference for improvement in the next period

CONCLUSION & RECOMMENDATION

Conclusions

From the discussion above, it can be concluded :

1. Golden Flower LLC Ungaran has carried out quality control to achieve predetermined quality standards, namely raw material control, production process control and final product control, but does not use methods that support these controls. The fact is that there is still a product incompatibility with the expected product, where the product quality is not in accordance with the standards set by garment production at Golden Flower LLC Ungaran. So that the possibility of errors or defects will definitely occur because no standard measurements are used and only based on previous experience.

2. Factors causing damage to the garment production process at Golden Flower LLC Ungaran, namely

   a. Man

   Human error is an error that usually occurs in the production process, in the cause of this defect the operator's condition is less careful and less concentrated in the selection of needles so that the needle is not suitable for the machine to be used. Wrong needle installation can be caused by the operator being tired in working so that the resulting product does not comply with company regulations

   b. Machine

   The large number of products that must be produced affects changes in machine settings. In addition, the working hours of the machine which are quite dense have resulted in a decrease in the technical age of the machine so that it requires an optimal maintenance system to keep the engine in proper condition The improper machine setting process results in higher engine damage resulting in an increase in the number of product defects

   c. Method

   Lack of information on operators will lead to misunderstanding, in the sense that the information received by the operator is not what it should be

   d. Material

   The condition of the material that is not in accordance with the standard affects the result of the product, such as the raw materials that have been used sometimes are types of fabrics that are difficult to sew In addition, there are fabric raw materials that are easily torn so that the fabric raw materials are easily damaged. Sometimes there are fabrics that have many patterns so that the cutting has to be adjusted accordingly. Lack of evaporation (iron) can cause the belt loop to twist, this can be caused by the technician (the iron machine) not checking the required heat limit.

3. The application of the Statistical Process Control (SPC) method in controlling damage to garment products at Golden Flower LLC Ungaran by using a control chart diagram can be seen that the level of product damage at Golden Flower LLC Ungaran is still under control and is still relatively stable, but to achieve process quality Good production Golden Flower LLC Ungaran needs to continue to make improvements to its production process in order to minimize product damage.

4. The application of the Statistical Process Control (SPC) method in controlling damage to garment products at Golden Flower LLC Ungaran can be classified according to the types of defects and what factors cause defects in the production process. So that it can be seen the types of damage and factors that most influence the defects of products produced by Golden Flower LLC Ungaran.

Theoretical Implication

In facing increasing business competition, companies are required to be able to produce quality products. Quality is the ability of a product or service to meet customer needs (Heizer & Render, 2014. Therefore, companies must be able to produce good products according to customer requirements. In addition, quality must also be in accordance with what is required or standardized or conformance to requirements. A product has quality if it conforms to predetermined quality standards.

As a manufacturing company engaged in garment industry, the Golden Flower LLC Ungaran is expected to produce good quality products. Therefore, the company must implement a proper and systematic production system, by implementing a quality control program for the products produced by the company. Tuna (2018) explains In garment industry depending on the type and organism of the company, there might be multiple problems. Those problems are the situations which affect the performance of the production, quality of the product and agreed delivery time. There is no factory which has no problem and working with 100% efficiency. Detecting problems are essential because after detection those problems may be solved and efficiency approximates to higher rates. After solving a problem another may come out and it is very normal because each batch, each different model of the garment is being prepared with different materials and accessories, techniques and settings.

At the beginning of each financial year, the Golden Flower LLC Ungaran always sets quality objectives as guidelines for doing work. In effort to implement quality control to reduce the level of product damage, this is based on the company's policy of increasing the number of incoming orders. Quality control is carried out on raw materials, production processes and finished products by the Quality Control department. From the observations and data collection carried out, it is known that there is still product damage so that it becomes a loss for the company because it will create waste. Companies need an action that can solve these problems. Process control statistics are statistical tools that can be used to carry out quality control as well as to find out the greatest priority of damage, find the cause of damage and determine control limits.

Montgomery (2013) explains The methods of statistical process control can provide significant payback to those companies that can successfully implement them Based on the results of the analysis, it can be seen the types of damage that occurred in the products produced by PT. Golden Flower Ungaran and the things that cause such damage. In general, the main factors that cause misdruk are caused by material, machine, methods and employee. The results of the calculation of the p control chart tell that the production process is not within the specified control limits, even tends to be uncontrollable because the points fluctuate irregularly and are out of control. This can happen because orders from companies are job shop, which means that the company produces and determines the amount of production according to demand, so that the amount of product damage produced is also irregular depending on certain conditions. The biggest damage was Skipped stitches, which amounted to 30.23% of the product, this was mostly caused by the instability of the sewing machine used for production, both the settings were volatile, the components were often damaged and often jammed.

The incident is due to the emphasis on the corrective maintenance system, namely maintenance of damaged machines, where in this system maintenance activities are repairing or only carried out when the machine has been damaged. Meanwhile, preventive maintenance that applies is limited to simple routine maintenance such as daily inspections and maintenance such as cleaning, lubricating and tightening engine components. With further investigation, recommendations for actions that can be taken by the company can be prepared to reduce the level of product damage that has occurred. This result is sufficient to be able to open the company's view to improve its manufacturing performance, especially in terms of controlling the total quality of production in order to consistently produce quality products by reducing the level of product damage to the lowest possible.

Recommendation
1. The final product in the company is still less controlled. The company should use Statistical Process Control (SPC) tools in controlling product quality. Control of Statistical Process Control (SPC) is carried out by analyzing the number of defects in the company and the Statistical Process Control (SPC) method is an appropriate method of quality control to minimize damaged products.
2. The factors of damage include humans, raw materials, machines, methods. It is better if the company improves the quality of its products, especially the clothes that the company produces, the quality policy that has been set must be implemented properly, among other things emphasizing on employees to be able to pay attention to environmental cleanliness and the tools used especially in sewing machines that are used so that engine lubricants and dust or soil are not a lot of dirty cloth used

3. Providing more intensive training for new employees so that their skills match production needs so that frequent product breakdowns can be anticipated.
4. There must be cooperation between all sections, especially the production section and the Quality control section as quality control so that the quality of the clothing produced can be accepted by the buyer

Limitation of Study
1. This study only took a limited number of samples, namely the period January 2020 - March 2020 so that the results could not be generalized.
2. Research on damage to garment products at Golden Flower LLC Ungaran is based on the Statistical Process Control (SPC) method, there are still several other techniques such as: Six Sigma and FMEA (Failure Mode and Effect Analysis)
3. This research is only limited to the type of clothing, so the results of this study cannot be generalized to all types of the company's final products.
4. This research is a case study at Golden Flower LLC Ungaran, so it cannot be generalized to other similar companies.

Future Research
    Suggestions for future researchers are that further researchers should examine companies that have not only one product, so that research is not only carried out on one product. Further research should be carried out with a long time and use other quality control tool such as six sgma, so that more detailed and in-depth information can be obtained.

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