PRODUCT QUALITY SUPERVISION MANAGEMENT AT DIKI CERAMICS (HOME INDUSTRY) WEDI DISTRICT, KLATEN REGENCY

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ARTICLE INFO	ABSTRACT
Received: Revised: Approved:	Quality control is a series of effective and efficient integrated activities that develop, maintain and improve the quality of some products and services to make consumers satisfied. The current study aims to identify consumers opinions on product quality, quality management systems, and costs required for it. The research was conducted at the Diki Ceramic Home Industry. That Data analysis used control chart, cost analysis and qualitative descriptive. That The data used in this study are consumer perception data and the number of products produced, the number of defective products, and the costs required to support them control process for one period. The results of the study show that product quality is controlled as a proportional value of damage is between the upper and lower limits, indicating that the controlling limitis (p) = 14%, the upper control limit is (UCL) 16,68%, the lower control limit (LCL) is 11,31%. Total cost required to control process control (QCC) Rp 535,714,285 the cost needed to guarantee the quality is Rp. 10,500,000., and the cost of quality (TQS) of Rp. 546,214,285 means company can compress the product by 210 earthenware or 14% of the total production. Score optimum damage (q^*) is 1500 of respondents indicated very positive perception, 50% indicate positive perception, and 6.67% indicate neutral perception.
KEYWORDS	product quality, quality control, management, and control system cost

INTRODUCTION

Industry is all forms of economic activities that manage raw materials and or utilize industrial resources to produce goods that have value added or higher benefits, including industrial services (Law No. 3 of 2014). Increasing the use value of an item is very important in an industry, the goal is to get an advantage in the midst of today's high

competition industry. Business or company activities cannot be separated from good quality control in order to produce a quality product (Assauri, 1980). Quality control efforts well, the Diki Ceramic Home Industry has tried to do it, starting from the preparation production by paying attention to the quality of the selected clay. supervision during the production process while still paying attention to the additional material (water) that is mixed, paying attention to the tools used to burn the ground, and when the product is packaged and ready for sale. Until at the time of distribution to the final consumer by paying attention to quality and managing the time product delivery to avoid damage. Even though supervision and procedures have been done well, the information obtained from the company is a product of *teko* that is still a lot of damage that can be caused by many types, so the product is damaged This is a loss for Diki Ceramics because it will reduce profits. Besides that, the company also does not have detailed records regarding the damage tolerance limits and cost management that is still done standardly and manually seen from the situation. Therefore, it is necessary to conduct research on quality control management at home Dika ceramic industry based on quality standards, supervision costs incurred by the company as well as understanding of consumer perceptions of the quality of *teko batik* products from Diki Ceramics. Currently, many businesses appear in the field of handicrafts, one of which is the pottery business in the form of batik teapot.

Home Industry Diki Ceramic is located in Melikan, Pagerjurang Village, Wedi District, Klaten Regency. This business was founded in 2007. *Grabah* Products in the form of a Batik Teapot, this is a pottery business activity that has the main ingredients in the form of clay treated with additional materials such as water.

RESEARCH METHOD

This research is located in a home industry located in Melikan, Pagerjurang Village Wedi District, Klaten Regency. This research was carried out for a week, from June 19, 2022 to June 26, 2022. The data used in this study are quantitative data and qualitative data. Source The power of this research is primary data and secondary data. The data collection method is observation, interviews, distribution of questionnaires, literature studies, and documentation.

Respondents in this study were consumers of the Diki Ceramics Home Industry. The number of samples in this study is 20 people consisting of 40% men and 60% women. The sampling technique used is convenience sampling or samples with convenience considerations. The key information in this research is to the owner of Diki Ceramics Industry.

The method of data analysis in this study consists of two, namely in terms of internal home industry and external home industry. Internal data in the form of numbers that can be processed using quantitative analysis that is using a control chart (control cart) and analysis cost (total cost). The use of control maps aims to determine the lower limit (LCL), the upper limit (UCL), and proportion (CL) which is to determine product damage control. External Home Industry in the form of measuring one's perception of product quality at Home Diki Ceramic Industry. according to Sugiyono (2010) the Likert scale can be used to measure attitudes, opinions, and perceptions of a person about social phenomena so that the data in This study was measured using a Likert scale. The results of the data obtained are then analyzed using descriptive analysis method.

RESULT AND DISCUSSION

Quality system supervision of Diki Ceramics Home industry, quality supervision on material raw as follow supervisor quality which conducted Diki Ceramics Home industry to keep the quality of soil clay: 1. Control pH ground, 2. No use irrigation automatic, 3. Keeping humidity land, 4. Till soil according to the needs

Supervision quality tool production

Cleanliness on every tool which used always guarded with method all tool which used cleaned with water then dried use cloth. To guarantee the quality of the goods made, the tool cleaning process is carried out before and after pottery making process. In this industry the owner also pays attention to the stove or tool burning that is with method of cleaning remainder burning, cleaning is done to be more efficient in the place and minimize the remaining residue burning that can reduce the standard of product.

Supervisor quality on processing

Supervision on making earthenware teapot batik consists that is with test endurance product before burning on earthenware, the next is burning until rate water in the *grabah* already run out. If there is a product which not yet in accordance standard before burning so the product will be direct processed repeat. If the damage is not too critical so the product will be fixed and the next will be enter the combustion process.

Quality supervision on process burning earthenware, cooling, and finishing earthenware. Quality control in the burning process is carried out 1-2 days until the pottery is finished   made completely dry. This drying process is very important because whether or not the product is sturdy will be more visible during this drying process. After the drying process is complete, the cooling process is carried out, the finished product burnt will be left to stand until it is really cold which will then enter painting process. In the product painting process, the product will be drawn accordingly motive which already adjusted.

Supervision quality on the final result.

Quality supervision of the product is focused on the teapot. Standard   quality supervision on product earthenware home teapot Industry including:

a. Checking by visual that motive which is drawn for sure already neat
b. Checking product durability product which generated no leak
c. Checking the quality of the product, there is no crooked or perforated.

Costs issued under supervision to maintain the quality of products on Diki Ceramics Home Industry .

Cost supervision quality (QCC)

$$QCC = \frac{R \times O}{q}$$

$$= \frac{1500 \times 75{,}000{,}000}{210}$$

$$= IDR\ 535{,}714{,}285$$

Quality assurance fee (QAC)

$$QAC = c \times q$$

= IDR 50,000 x 210

= IDR 10,500,000

Total cost on quality (TQC)

TQC = QCC + QAC

= IDR 535,714,285+ IDR 10,500,000

= IDR 546,214,185

Table 1

Cost - cost Supervision product quality pottery

teapot batik yuan produced by Home industry Diki ceramic

Amount Production (earthenware)	Amount Damage (earthenware)	QCC (Rp)	QAC (Rp)	TQC (Rp)
1,500	210	235,714,285	10,500,00	546,214,285

The tighter the quality control issued by the company, the more fewer defective products, with the amount of quality control costs increasing large and quality assurance becomes smaller, this results in the total cost the greater the quality issued so that sales can increase by quality product which good and vice versa.

Amount damage optimum (q*)

$$q^* = \sqrt{\frac{1500 \times Rp\ 75.000.000}{Rp\ 50.000}}$$

= 1500 pieces

Cost supervision quality (QCC) which tolerated

$QCC = \frac{R \times O}{q}$

= Rp 75.000.000

Biaya jaminan mutu (QAC) yang ditoleransi

QAC = c x q

= Rp 50.000 x 210

= IDR 75,000,000

Tolerable quality assurance (QAC)

costsQAC = c x q

= IDR 50,000 x 210

= IDR 75,000,000

Total cost on quality (TQC) tolerated

TQC = QCC + TAC

= IDR 75,000,000 + IDR 75,000,000

= Rp 150,000,000

Table 2

Cost – Supervision fee Product Quality pottery teapot Batik which Tolerable by Home Industry Diki ceramic

Amount (Production) (earthenware)	Amount Damage (earthenware)	q*	QCC (Rp)	QAC (Rp)	TQC (Rp)
1500	210	1500	75,000,000	75,000,000	150,000,000

The above calculations have advantages such as small quality control crocodiles and no add supervision quality. Weaknesses i.e. cost must-have quality issued by the Diki Ceramic Home Industry is getting bigger because of the high cost must be borne in proportion to the selling price of the defective product due to the costs incurred must borne comparable with price sell product which disabled, so that total cost   quality which must be removed to become bigger also.
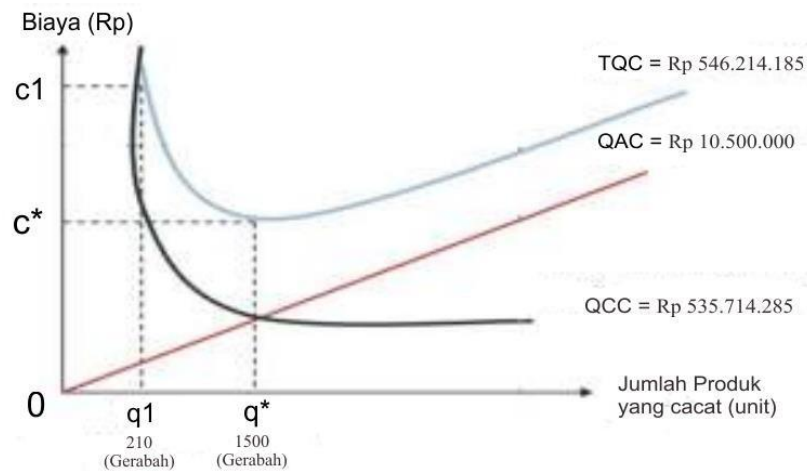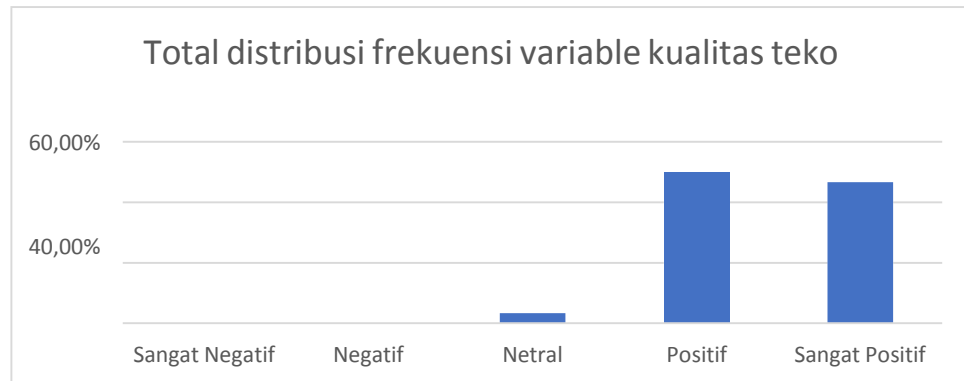

Picture 1
Total Cost Quality of Pottery Chart

The results obtained from the data obtained are a description of the performance of Home Diki Ceramics Industry from 19 June to 26 June 2022. Thus, effective quality control is carried out by Home Industry then all products produced can be controlled, so that the desired quality control can be achieved achieved. In addition, it can be used as a consideration for the Home Industry Diki ceramic has take Step to front for operate management the supervision good.

Response Respondent to Variable Perception Consumer
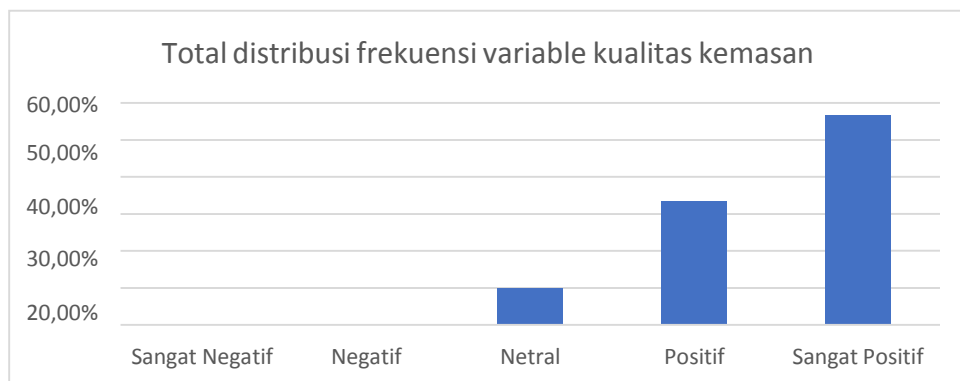Total distribution frequency variable quality teapot
Perception respondent to quality teapot Home Industry Diki ceramic divided into the three indicator that is more sturdy, more interesting and price friendly. Calculation of the frequency of water quality variables obtained results Total Distribution Frequency Variable. Chart the could seen on Picture 2.

Picture 2

Total Distribution Frequency variable Quality teapot

Based on Figure 2, it can be seen in the total quality variable frequency distributor teapot based on the perception of the 20 respondents. Total overall perception of respondents the highest results were 50% (positive), 46.67% (very positive) and 3.33% (neutral), then overall the total water quality variable is said to be positive or most consumers expect

Total distribution variable frequency quality packaging

Home Industry batik teapot packaging quality variables are divided into three: indicator that is among them consist from safe, sturdy , and clean. Calculation frequency variable quality of packaging obtained results. Total variable frequency distribution graph. Chart the could seen picture 3

Picture 3

Total distribution frequency of packaging quality variable

Based on Figure 3, it can be seen in the total frequency distribution of the quality variable packaging based on perception 20th respondents. Where from total whole perception respondents obtained results highest that is that is 56 ,67 % (very positive), 33.33% (positive) and 10% (neutral), then overall the total water quality variablesaid very positive or at most consumer's expectation.

Total distribution frequency quality Product Home Industry Diki ceramic

The quality of Diki Ceramic Home Industry products is divided into two variables, namely among them variable quality teapot and variable quality packaging.

Calculation frequency

second variable the obtained results total distribution frequency quality product Home Industry in form chart distribution frequency quality product. The chart can be seen on Picture 4,
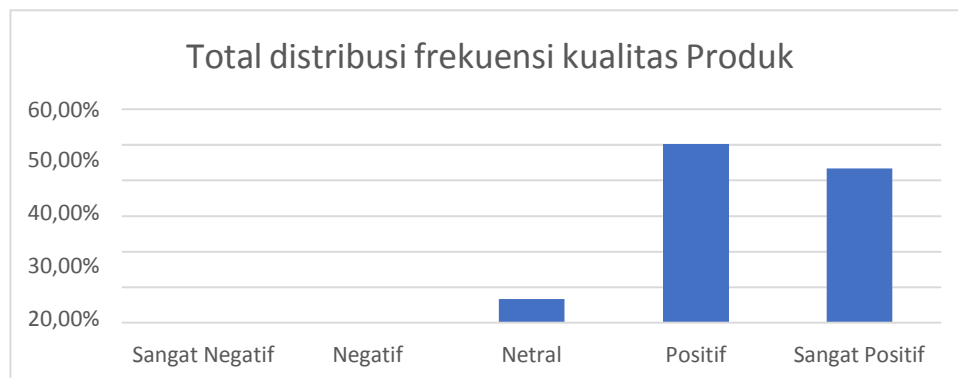
Picture 4

Total Quality Frequency Distribution of Diki Ceramics Home Industry Product

Based on Figure 4, it can be seen that the total frequency distribution of the two variables quality based on perception to 20 respondents. Where from total whole perception respondents got the highest results, namely 50% (positive) and 43,33 % (very positive) and 6.67% (neutral), then overall the three quality variables are said to be positive or at most consumers expect.

CONCLUSION

Quality control system that has been implemented in accordance with the standards applied by industry. Based on measurements using the control map all products are located in control. Total respondents' perceptions of product quality in Home Industry Diki Ceramics on positive criteria, namely very positive and neutral. Thus the perception respondent by whole that is positive or quality product the which most expected.

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