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QUALITY CONTROL AND PRODUCTIVITY OF METAL CRAFT PRODUCTS IN PASIR MUKTI VILLAGE, CITEUREP DISTRICT, BOGOR REGENCY

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Abstract

Metal products are one of the superior products of Bogor Regency, which is located in Pasirmukti Village, Sukahati, and Tarikolot, Citeureup District. The local government of Bogor Regency has made the icons in these villages a thematic village that will be used as an integrated training center for marketing the products of the metal and body industry. The area of Citereup District is because the area has also produced metal industries since the 1980s, and has survived to this day, Micro, Small and Medium Enterprises (MSMEs) are the main supporter of the economy of the residents of Citeureup District. "The majority of the population is SMEs, there are few civil servants and farmers, and some work as service providers", the name "Kampung Kaleng" was given because all the craftsmen in Kampung Dukuh make products made from cans. “Kaleng Kaleng officially existed in 2012, but the craftsmen themselves have existed for a long time and have been passed down from generation to generation.” This Kampung Kaleng resident has marketed his products to other islands such as Kalimantan, Makassar, and other areas in Indonesia through online media and exhibitions he participated in. Previously, craftsmen were only able to sell their products to the Greater Jakarta area. The manufacturing process from raw materials to finished products is carried out directly by the residents of Kampung Dukuh. Raw materials are obtained from existing distributors in the Citeureup area itself. Product prices in Kampung Kaleng are quite diverse depending on the type of goods and their size. The range starts from IDR 15 thousand for a can of mini crackers to IDR 700 thousand for the price of an oven. "The turnover for craftsmen is around IDR 500,000 thousand to IDR 1,000,000 per day". The profit that the craftsmen take is about 10% to 20% of the sales turnover. The competence of the metal industry IKM Manager in Bogor Regency is still low. The problem of competence and performance of human resources related to the opportunity for industrial development in producing standardized product quality is a problem for the metal industry SMEs. The improvement strategy that can be carried out is conducting training and continuous development regarding knowledge, certified skills, and motives supported by the Bogor Regency Cooperatives and SMEs Office as well as government regulations that support IKM in increasing competitiveness which has an impact on sustainable business. Small and medium industries for the metal industry are centered in Citeureup District with a total of 194

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business units spread across several villages. SMEs have been proven to make a significant positive contribution to efforts to overcome economic problems. The metal industry can also create jobs and reduce unemployment, expand employment and provide economic services. However, in reality, there is a gap faced by metal SMEs today. The purpose of this community service is to find out how the production function of metal crafts is in controlling product quality, secondly to determine the effect of Physical Facilities in Metal Workshops on product quality control, thirdly to find out how to Inspect Product Quality Control, and fourthly how to influence the production function and physical facilities of the workshop. to control checks on product quality.
Keywords: Production function control, Physical Facility Inspection, Production Quality Control, Metal Products.

INTRODUCTION

I. Situation Analysis

Metal products are one of the superior products of Bogor Regency, which is located in Pasirmukti Village, Sukahati, and Tarikolot, Citeureup District. Pasir Mukti Village is a village that was expanded from Tajur Village, Citeureup District, Bogor Regency. At the beginning of the formation of Pasir Mukti Village, Pasir Mukti Village consists of 3 (three) Hamlet Areas, namely Hamlet, Pasir Angin, and Rawabogo. The product evaluation results show that metal products generally have certain characteristics related to market share.

The area of Pasir Mukti Village is geographically located between -6,511 South Latitude or 106.89 East Longitude with a sea level height of 196 meters. In addition, administratively, Pasir Mukti Village consists of 6 Rukun Warga and 26 Rukun Tetangga, and its area is 244 Ha with 3,018 households with 5,799 men and 5,616 women with a total population of 11,375 bordering the Tarikolot village on the west and east. with Tajur Village, in the south with Sukahati Village and the north with Gunung Sari Village.

Some of the people have skills in metal crafts, and some functional products needed by the community such as baking sheets, corkscrews, various cake molds, pans, rice cake molds, trash cans, and others can be marketed directly to Citeureup Market or through collectors. Some products, such as pans, even have the potential for temporary export, namely trash cans that have the potential for direct marketing to offices. In this regard, metal craftsmen should take the role of direct marketing so as not to go through third parties that harm the craftsmen. Although various efforts have been made, it is still felt that the market is not attracting interest. Some things can be used as material for further evaluation, such as designs that still look monotonous, do not have a brand, only part-time workers, are not too well trained, and with modest wages. In addition, they are still weak in terms of product promotion, most of them do not have business licenses, management is still too simple and conventional or not professionally managed, and product stock is limited because they tend to serve orders only. The various inefficiencies that occur cause prices to not be able to compete in the market, so they seem expensive.

Figure 1. Raw Materials That Have Been Cut
Source: Partner Documents

Figure 2. Pressing Process
Source: Photo of the pressing process

Figure 3. Collection of Finished Products
Source: Finished Product Collection Photos

Figure 4. Various Finished Products
Source: Photos of Various Finished Products

Figure 5. Baking Process
Source: Initial Document

1. Potential

The potential for local economic development based on superior products of non-governmental groups is analyzed from the results of mapping of non-governmental groups and mapping of superior products intended for the development of metal craftsmen, so the analysis and assessment are adjusted to the potential that exists in Bogor Regency. Based on these several things, metal craftsman businesses based on superior products that support the economy in Bogor Regency are more active in the fields of supporting sub-sector industries and handicrafts.

The potential that partners have for being craftsmen in their village for generations is from the side of human resources to in terms of education, metal craftsmen understand literacy and basic arithmetic until they have started a hereditary business for the small industrial sector of metal craftsmen with average experience in carrying out business activities for more than 4 years so that they can process shapes according to consumer orders which require skills in producing finished goods products for simple designs per person on average

can produce 5-15 units/day, while for products that have designs certain average volume of product produced 1-4 units/day,

From the social side, business actors or craftsmen who are engaged in the metal industry sector at a village scale of more than 100 people - Communication in the form of information between business actors has gone quite smoothly, then seen from the infrastructure - The location of business activities is currently still in the home environment of each business actor - Access to the location of business activities already exists and road conditions are decent - Marketing of the products produced already exists and finished goods products are still displayed in each business actor's house - Supporting equipment for the manufacture of metal products still uses semi-modern technology and the financial condition of the craftsmen Average The average small business actor/craftsman in the metal product sector already has business assets in the form of semi-modern equipment, motorized vehicles. - Business actors in recording business transactions already exist even though they are still very simple - Average turnover per month is 5 million-10 million with an average profit of 10% - 25%.

Then natural resources become the strongest part because - The business activities of the products produced do not depend on natural resources - The availability of raw materials around the craftsmen's area is still affordable - The products produced do not depend on local raw materials - Sources of raw materials can use scrap metal materials.

2. Needs

Based on the identification of vocational needs for problems faced by metal craftsmen, training related to business improvement and development is needed by each metal craftsman. In its development to date, metal craftsmen still need to increase their capacity capabilities, including:

a. Improving the quality of business production
b. Product design development
c. Business Management/Financial Management
d. Marketing and networking issues
e. Packaging

The growth of SMEs in the Bogor district still has obstacles, especially in increasing the competence of human resources, especially metal craftsmen. There is a competency problem possessed by the metal industry human resources in Bogor district, a competency improvement strategy is needed to support the performance of metal crafts managers to be competitive and sustainable and the implications of appropriate managerial skills to manage the metal industry. A competency-based HR improvement strategy that has been considered from the problems faced by metal industry IKM managers in Bogor Regency by paying attention to the individual as a whole to provide benefits for both individuals and organizations. It is hoped that the metal industry IKM in Bogor Regency can improve the performance of IKM, increase regional income, create jobs, and IKM will become a place for selling sustainable regional creativity according to the needs of employees and entrepreneurs. In addition, so that employers and workers are ready to face increasingly fierce competition, superior human resources are needed. Therefore, five characteristics are needed in

formulating competencies such as knowledge, skills, attitudes, self-concept, traits, and motives.

There are four state-owned companies as suppliers of raw materials needed for metal farming tools to provide added value to local products (Kemenperin, 2017). At this time consumers not only need quality products but also need certified craftsmen. This indicates the large opportunity for human resources to be able to work in the metal industry. The development of the metal industry is also followed by the need for competent human resources (HR).

Table I. Metalworker SWOT Analysis

IFAS / EFAS	Strength (S)	Weaknesses (W)
	1. Speed in the production of metal products 2. Relatively cheaper and competitive product prices (profit margin above 10%) 3. Complete information and skills related to metal products that will be produced both from variance and production size 4. know and know the product that will be the main brand 5. Some metal products have innovations in their shapes and models 6. Production quality is good with production quantity above the average of 10,000 pcs per month 7. The main raw materials for metal products are easy to obtain and in large quantities 8. fixed number of buyers stable number of different types of buyers 9. buyers as regular customers 10. direct sales transactions 11. The number of requests for metal products 12. The breadth of the product sales market covers the island of Java and outside Java 13. Quality products, and used by many people	1. Minimal market knowledge 2. Funding (Capital) with the market 3. Conventional business marketing 4. Do not use promotional or advertising services 5. Not maximizing the role of social media in strengthening products and companies 6. Don't have company partners yet 7. Does not have intellectual property protection (product certification) 8. There is no measurable product quality standardization 9. Unstable price of metal main raw material 10. Minimal innovation support technology and facilities

Source: Researcher's primary data analysis.

II. Partner Problems

Referring to the item analysis of the situation, the priority issues of partners include the following:

a. Human Resources Aspect

1) The need for additional skills from design/pattern techniques, modern technology applications, product standardization, marketing techniques, and business financial reports.
2) The business activities of these metal craftsmen/industry actors are still associated with household activities. This will have an impact on health problems.
3) Do not focus on the business activities that are being carried out because they do not have a clear work plan.
4) The craftsmen/small metal industry players do not have a business plan.

b. Social Aspect

1) The group of craftsmen or business actors does not have regular meetings to discuss the issue of the development of the metal industry.
2) There is still a gap related to price determination so competition between actors is not healthy.
3) Do not complement each other's needs between business actors so they tend to run independently.
4) The absence of togetherness in increasing business independence in groups has not yet built a business network in groups to increase business both in terms of productivity and marketing.

c. Infrastructure Aspect

1) The feasibility of the location of the business or business activities still joining the household activities.
2) Small industrial business actors in metal products do not yet have a business license so the potential for business development is very limited.
3) Business actors do not yet have a joint gallery facilitated by the village government for the products they produce.
4) Sales of goods/products produced are still accommodated by middlemen so that the turnover and supporting equipment in the manufacture of metal products are not sufficient for standardization.

d. Financial aspect

1) Access to capital sources has not been facilitated.
2) The amount of paid labor still depends on the number of orders or orders only.
3) Do not have adequate bookkeeping records so cashflow calculations for business activities cannot be calculated accurately.
4) Business capital is still mixed with the household economy.

e. Natural Resources Aspect

1) 80% of raw material procurement is still imported products.
2) Modification of raw materials has not been the focus of the craftsmen.
3) The price of raw materials is quite expensive.

Some of the internal factors are incomplete information and linkages between the production function, the physical workshop facilities, and product quality control not having financial reports, and not having short-term or long-term strategies or targets. External factors that become problems are the absence of quality control, technology that is still weak making production not meeting the standards, lack of access to capital and market access, and marketing that is not promoted due to the performance of human resources that have not been maximized. The main problems that occur in the metal industry SMEs are creativity in human resources, technology, production locations, access to capital, and market access which is still limited. Limited capabilities, skills, and knowledge or insight into human resources result in weak management, organizational, and business performance. The product evaluation results show that metal products generally have certain characteristics related to market share. Several functional products that are needed by the community such as pans, coriander, various cake molds, pans, rice cake molds, trash cans, and others can be marketed directly to Citeureup Market or through collectors. Although various efforts have been made, it is still felt that the market is not attracting interest. Some things can be used as material for further evaluation, such as designs that still look monotonous, don't have a brand, workers who are only part-time, not too trained, and with modest wages. In addition, they are still weak in terms of product promotion, most of them do not have business licenses, management is still too simple and conventional or not professionally managed, and product stock is limited because they tend to serve orders only. The various inefficiencies that occur cause prices to not be able to compete in the market, so they seem expensive.

IMPLEMENTATION METHOD

The implementation method fulfills the strategic steps to optimize the productivity and quality of metal craftsmen as follows: The population as the locu of research is 20 metal craftsmen in Dukuh Citeurep Village with a sampling technique using purposive sampling method because it is based on the willingness and productivity of metal craftsmen of cake molds. many as the target of observation and community service.

Initial activities in overcoming metal quality control problems are viewed from the side of the Control Inspection Questionnaire over the Production Function as measured by:

1. Written, accurate, and detailed production schedule.
2. The production schedule is always checked for compliance with the existing raw material inventory.
3. Production schedules are made according to customer requests and the need for inventory in the warehouse.
4. Production reports are made accurately, on time, and can be accounted for by the parties concerned.
5. Every production activity requires work instructions.
6. Implementation of production activities by the work instructions given.

7. There is a comparison between the planned and actual production activities.
8. There are analytical actions and corrective actions if there are discrepancies between the planned and actual production activities.
9. Availability of inventory cards to record and find out the amount of inventory in the warehouse.
10. There is an inspection of the amount of physical inventory with the amount according to the records in the warehouse.
11. There is protection against inventory in the warehouse.
12. There is a separation of functions, authorities, and responsibilities between the parties who handle the production, warehouse, and accounting divisions.
13. Operation of equipment by all production personnel correctly and on time according to the capacity of the tool.
14. There is regular maintenance, inspection, and repair of production equipment.
15. Supervised the unloading of raw materials.
16. Good control of product delivery to consumers.
17. There is special handling in terms of delays in production, delivery of raw materials, and products to consumers.
18. The product release that occurs is by the records made.

In-depth questions and explanations related to the Observation Examination of Physical Facilities in the Metal Workshop in 19 in-depth questions consisting of:

1. The location of workshop is close to the house.
2. The location of workshop is close to the location of the raw material supplier.
3. The physical facilities in the workshop are adequate to carry out an effective, efficient, and economical production process.
4. The location of the workshop and the house is kept clean and tidy.
5. Workshop locations and houses have adequate water and electricity sources.
6. The layout of the building supports the smooth flow of raw materials, goods in process, and finished metal goods.
7. The layout of the workshop location and the house supports a good communication relationship between workers and workers and the management.
8. The layout of the production equipment in the workshop is adequate for the smooth operation of metal craftsmen.
9. The layout of the workshop and the house has security equipment.
10. The available production tools can be used optimally in the implementation of the production process.
11. There is good maintenance and care for production equipment and other facilities.
12. The available warehouse can accommodate the existing inventory of raw materials and finished goods.
13. There is special security for the warehouse for raw materials and finished goods
14. The number of workers in metal craftsmen is adequate.
15. Control over workers in metalworking is adequate.
16. Workers are provided with regular training programs.
17. Numbering for important forms and documents is done correctly.

18. Metal craftsmen have a personnel function that handles problems related to their work.
19. Metal craftsmen have product delivery facilities for consumers.

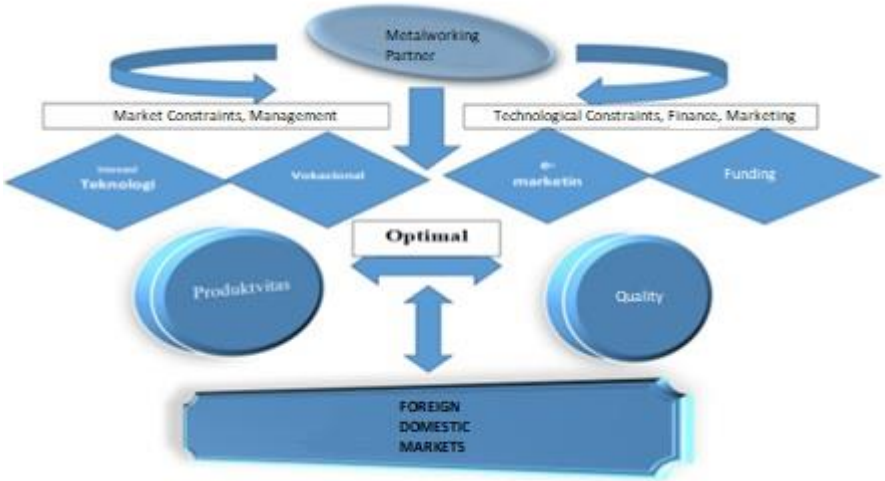
Then proceed with measurements on Product Quality Control Inspection represented by 11 question dimensions as follows:

1. Metal craftsmen pay attention to the quality of the products produced.
2. Control of the quality of the product has been adequate.
3. There is a metalworking section that specializes in product quality.
4. There is a report to record product quality problems produced by metal craftsmen.
5. The metal craftsman has analyzed the defective product to determine the factors causing it and is trying to take corrective action.
6. Actions to improve product quality can be carried out properly and on time.
7. Raw materials received by metal craftsmen from suppliers undergo inspection before being used in the production process.
8. The production department and the inspection department have been well coordinated.
9. The management has paid close attention to the factors that cause product defects.
10. Management can always take action to improve the efficiency of inefficient metalworking operations.
11. The management obtains adequate information regarding the use of production equipment and labor in metalworking operations.

Then a descriptive statistical analysis was carried out, followed by an exploratory test and an influence test in the coefficient of determination and a contribution test in r square and hypothesis testing T and F so that the resulting impact could be measured in absolute and quantitative terms.

A literature study is to collect data theoretically to support data that has been obtained directly from the field based on books, and flash books.

Problem Approach Framework



PKM IMPLEMENTATION SCHEDULE

No	Name of activity	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Proposal Preparation												
2	Preparation		X	X									
3	Identification of potential metal craftsmen and mapping			X	X								
4	Identification of Internal, External Problems, Opportunities, and challenges of metalworking			X	X	X							
5	Preparation of Question Instruments				X	X	X						
6	Distribution of Respondents Questionnaire									X	X		
7	Data Processing and Analysis									X	X	X	
8	Poster Preparation as Final Report											X	X

RESULTS AND DISCUSSION

1. Descriptive Analysis Results

This study uses descriptive analysis as a tool to find out how the respondents respond to the questions that have been provided in the questionnaire. Respondents in this study were Loham craftsmen in Kampung Dukuh Citeurep with a sampling technique using a purposive sampling method. The sample that was successfully obtained was 17 people which can be seen in the following table:

Table 1. Number of Samples That Have Been Collected

Total Sample		
Information	Amount	Percentage
Shared Questionnaire	20	100%
The questionnaire that does not return	3	15%
Processed Questionnaire	17	85%

Based on the table above, it can be seen that the questionnaires that have been distributed are 20 people, but the questionnaires that are not returned are 3 people with a percentage of 15% so that the results of the questionnaires that can be processed are 17 people with a percentage of 85% of the questionnaires that have been distributed.

Characteristics of the questionnaire that has been given by the researcher to the respondents' responses, there is a scale used with intervals of 1 to 5 which states that:

1 = Strongly disagree

2 = Disagree

3 = Neutral
4 = Agree
5 = Strongly agree

a. Respondent's Response to Production Function Control

Respondents of 17 people to the production function as many as 18 questions that can be described as follows:

Table 2. Respondents' Responses to Control of Production Functions

		Total Responses of Respondents				
		1	2	3	4	5
1.	Production schedule in writing, accurate, and detailed.	3	7	5	1	1
2.	The production schedule is always checked for compliance with the existing raw material inventory.	4	9	2	-	2
3.	Production schedules are made according to customer requests and the need for inventory in the warehouse.	6	9	-	-	2
4.	Production reports are made accurately, on time, and can be accounted for by the parties concerned.	4	8	2	1	2
5.	Every production activity requires work instructions.	2	10	2	-	3
6.	The layout of the building supports the smooth flow of raw materials, work in process, and finished metal goods.	2	11	2	-	2
7.	There is a comparison between planned and actual production activities.	1	9	3	2	2
8.	There are analytical actions and corrective actions if there are discrepancies between the planned and actual production activities.	2	10	4	-	1
9.	Availability of inventory cards to record and find out the amount of inventory in the warehouse.	5	6	5	-	1
10.	There is an inspection of the amount of physical inventory with the amount according to the records in the warehouse.	3	9	3	1	1
11.	There is protection against inventory in the warehouse.	5	8	1	1	2
12.	There is a separation of functions, authorities, and responsibilities between the parties who handle the production, warehouse, and accounting divisions.	2	9	4	-	2
13.	Operation of tools by all production personnel	3	8	4	-	2

	correctly and on time by the capacity of the tool.					
14.	There is regular maintenance, inspection, and repair of production equipment.	4	8	3	1	1
15.	Supervised the unloading of raw materials.	3	5	5	1	3
16.	Good control of product delivery to consumers.	5	6	4	-	2
17.	There is special handling in terms of delays in production, delivery of raw materials, and products to consumers.	4	8	2	1	2
18.	Product releases that occur are by the records made.	3	8	3	-	3

Based on the table above, it can be seen that the number of respondents as many as 7 people or with a percentage of 41.17% answered disagree with the questions stating the production schedule in writing, accurately, and in detail. Then 9 respondents or a percentage of 52.94% answered disagree with the response to questions stating that the production schedule is always checked for conformity with the existing raw material inventory. Furthermore, the next statement also has respondents' responses with the majority of answers disagreeing, except for the 15th item question which has the same answer as neutral, namely 5 people with a percentage of 29.41% on questions stating supervision of the unloading of raw materials.

b. **Respondents' Responses to Observations of Physical Facilities**

Respondents of 17 people to the production function as many as 19 questions that can be described as follows:

Table 3. Respondents' Responses to Observations on Physical Facilities

		Total Responses of Respondents				
		1	2	3	4	5
1.	The location of workshop is close to the house.	8	6	1	-	2
2.	The location of workshop is close to the location of the raw material supplier.	4	10	2	-	1
3.	The physical facilities in the workshop are adequate to carry out an effective, efficient, and economical production process.	2	9	5	-	-
4.	The location of the workshop and the house is kept clean and tidy.	6	4	6	-	1
5.	The workshop location and the house already have adequate water and electricity sources.	5	8	2	1	1
6.	The layout of the building supports the smooth flow of raw materials, work in process, and finished metal goods.	3	8	3	1	2
7.	The layout of the workshop location and the house	4	10	1	-	2

	supports a good communication relationship between workers and workers with the management.					
8.	The layout of the production equipment in the workshop is adequate for the smooth operation of metal craftsmen.	5	8	2	-	2
9.	The layout of the workshop and the house has security equipment.	3	6	5	1	2
10.	The available production tools can be used optimally in the implementation of the production process.	5	6	4	-	2
11.	There is good maintenance and care for production equipment and other facilities.	5	6	4	1	1
12.	The available warehouse can accommodate the existing inventory of raw materials and finished goods.	4	6	3	2	2
13.	There is special security for the warehouse for raw materials and finished goods	3	5	7	-	2
14.	The number of workers in metal craftsmen is sufficient.	2	5	7	1	2
15.	Control over the workers in metalworking is adequate.	2	5	6	2	2
16.	Workers are provided with regular training programs.	1	2	3	9	2
17.	Numbering for important forms and documents is done correctly.	3	4	7	1	2
18.	Metal craftsmen have a personnel function that deals with problems related to their work.	2	4	5	3	3
19.	Metal craftsmen have the facility of delivering products to consumers.	2	11	1	-	3

Based on the table above, it can be seen that the number of respondents as many as 8 people or with a percentage of 47.05% answered strongly disagree with the questions that stated that the location of the Workshop was close to the house. Then the respondents of 10 people or with a percentage of 58.82% answered disagree with the response to the question stating that the location of the workshop is close to the location of the raw material supplier. Likewise for the next question item, each of which has its majority of respondents' responses, which are covered by disagreeing with 11 questions and the rest are covered by the existing scale.

c. Respondents' Responses to Product Quality Control

Respondents of 17 people to the production function as many as 11 questions that can be described as follows:

Table 4. Respondents' Responses to Product Quality Control

		Total Responses of Respondents				
		1	2	3	4	5
1.	Metal craftsmen pay attention to the quality of the resulting product.	8	6	1	-	2
2.	Control over the quality of these products has been adequate.	4	10	2	-	1
3.	There is a metalworking section that specializes in product quality.	2	9	5	-	-
4.	There are reports to record product quality problems produced by metal craftsmen.	6	4	6	-	1
5.	Metal craftsmen have carried out an analysis of defective products to find out the factors causing them and are trying to take corrective action.	5	8	2	1	1
6.	Actions to improve product quality can be carried out properly and on time.	3	8	3	1	2
7.	The raw materials received by metal craftsmen from suppliers undergo inspection before being used in the production process.	4	10	1	-	2
8.	The production department and the inspection department have been well coordinated.	5	8	2	-	2
9.	The management has paid close attention to the factors that cause product defects.	3	6	5	1	2
10.	Management can always take action to improve the efficiency of inefficient metalworking operations.	5	6	4	-	2
11.	The management obtains adequate information regarding the use of production equipment and labor in metalworking operations.	5	6	4	1	1

Based on the table above, it can be seen that the number of respondents as many as 8 people or with a percentage of 47.05% answered strongly disagree with the question item stating that metal craftsmen pay attention to the quality of the products produced. Then the respondents of 10 people or with the percentage of 58.82% answered disagreed with the response to questions stating that the control over the quality of the product was adequate. Likewise for the next question item, each of which has its majority of respondents' responses, which are covered by disagreeing with 9 questions and the rest are covered by the existing scale.

Table 5. Descriptive Statistical Analysis

	Y	X1	X2
Mean	42.65	46.88	27.88
Median	37	45	24
Maximum	90	93	55
Minimum	18	19	11
Std. Dev.	20.31	20.90	12.93

Source: Primary data (processed, 2022)

Based on table 5 above, it can be seen that there are 3 variables consisting Production Functions, Metal Physical Facilities, and Product Quality Control. A sample of 17 respondents who managed to get each variable had a minimum value for the lowest value, a maximum value for the largest value, and the mean value for the average value, and there was also a standard deviation value in this study.

Table 6. Validity Test Results Against Production Function (Y)

No	Question Items	Pearson Correlation	Sig. (2-tailed)	Information
1	Y1	0.95	0.00	Valid
2	Y2	0.97	0.00	Valid
3	Y3	0.91	0.00	Valid
4	Y4	0.98	0.00	Valid
5	Y5	0.94	0.00	Valid
6	Y6	0.95	0.00	Valid
7	Y7	0.95	0.00	Valid
8	Y8	0.91	0.00	Valid
9	Y9	0.91	0.00	Valid
10	Y10	0.97	0.00	Valid
11	Y11	0.97	0.00	Valid
12	Y12	0.97	0.00	Valid
13	Y13	0.98	0.00	Valid
14	Y14	0.97	0.00	Valid
15	Y15	0.94	0.00	Valid
16	Y16	0.97	0.00	Valid
17	Y17	0.98	0.00	Valid
18	Y18	0.96	0.00	Valid

Source: Primary data (processed, 2022)

Based on the results of the analysis of questions related to the production function (y) using Pearson Correlation, it can be seen that all variables are significant because of the value of Sig. (2-tailed) is less than 5%.

Table 7. Validity Test Results on Metal Physical Facilities (X1)

No	Question Items	Pearson Correlation	Sig. (2-tailed)	Information
1	X11	0.94	0.00	Valid
2	X12	0.91	0.00	Valid
3	X13	0.84	0.00	Valid
4	X14	0.90	0.00	Valid
5	X15	0.96	0.00	Valid
6	X16	0.97	0.00	Valid
7	X17	0.94	0.00	Valid
8	X18	0.96	0.00	Valid
9	X19	0.97	0.00	Valid
10	X110	0.97	0.00	Valid
11	X111	0.96	0.00	Valid
12	X112	0.97	0.00	Valid
13	X113	0.96	0.00	Valid
14	X114	0.97	0.00	Valid
15	X115	0.97	0.00	Valid
16	X116	0.86	0.00	Valid
17	X117	0.97	0.00	Valid
18	X118	0.94	0.00	Valid
19	X119	0.91	0.00	Valid

Source: Primary data (processed, 2022)

Based on the results of the analysis of questions related to metal physical facilities (x1) using Pearson Correlation, it can be seen that all variables are significant because of the value of Sig. (2-tailed) is less than 5%.

Table 7. Validity Test Results on Product Quality Control (X2)

No	Question Items	Pearson Correlation	Sig. (2-tailed)	Information
1	X21	0.89	0.00	Valid
2	X22	0.96	0.00	Valid
3	X23	0.96	0.00	Valid
4	X24	0.97	0.00	Valid
5	X25	0.96	0.00	Valid
6	X26	0.97	0.00	Valid
7	X27	0.98	0.00	Valid
8	X28	0.97	0.00	Valid
9	X29	0.98	0.00	Valid
10	X210	0.97	0.00	Valid
11	X211	0.97	0.00	Valid

Source: Primary data (processed, 2022)

Based on the results of the analysis of questions related to product quality control (x2) using Pearson Correlation, it can be seen that all variables are significant because of the value of Sig. (2-tailed) is less than 5%.

Table 8. Reliability Test Results on the Production Function (Y)

Reliability Statistics	
Cronbach's Alpha	N of Items
.994	18

Source: Primary data (processed, 2022)

Cronbach's Alpha value is 0.994, greater than 0.6, indicating that the question items from Y1 to Y18, reliably represent the Y variable.

Table 9. Reliability Test Results on Metal Physical Facilities (X1)

Reliability Statistics	
Cronbach's Alpha	N of Items
.992	19

Source: Primary data (processed, 2022)

Cronbach's Alpha value is 0.992, greater than 0.6, indicating that the question items from X11 to X119, reliably represent the X1 variable.

Table 10. Reliability Test Results on Product Quality Control (X2)

Reliability Statistics	
Cronbach's Alpha	N of Items
.992	11

Source: Primary data (processed, 2022)

Cronbach's Alpha value is 0.992, greater than 0.6, indicating that the question items from X21 to X211, are reliable and represent the X2 variable.

Table 11. Coefficient of Determination Test Results (R Square)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994[a]	.988	.986	2.39801
a. Predictors: (Constant), X2, X1				

Source: Primary data (processed, 2022)

Based on the results of data processing in the table above, it can be seen that the R Square value is 0.988, which means that the Y variable (Production Function) of 98.8% percent is influenced by the independent variables consisting of X1 (Metal Physical Facilities) and X2 (Product Quality Control) and the rest is 1.2% is influenced by other independent variables outside this study. Therefore, the primary data used has a value that is almost close to 100%, which means that the primary data is very good.

Table 12. ANOVA. Test Results

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6517.376	2	3258.688	566.686	.000[b]
	Residual	80.506	14	5.750		
	Total	6597.882	16			
a. Dependent Variable: Y						
b. Predictors: (Constant), X2, X1						

Source: Primary data (processed, 2022)

It is known that the value of sig. of F less than alpha (5%) means reject Ho, which means that the regression coefficient of X1 is not the same as the regression coefficient of X2. Based on the results of the Anova test in table 12 above, it can be seen that the value of Sig. from F of 0.000 which means that the value is smaller than alpha (5%) so that this study finds the regression coefficient variable X1 (Metal Physical Facilities) is not the same as the regression coefficient X2 (Product Quality Control).

Table 13. Individual Regression Coefficient Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.471	1.510		-.974	.347
	X1	.298	.246	.307	1.211	.246
	X2	1.082	.397	.689	2.723	.017

a. Dependent Variable: Y

Source: Primary data (processed, 2022)

It is known that if the thit value is greater than the t table, then reject Ho, which means that the independent variable influences the dependent variable. If you look at the results of the coefficient data in the table above, the thit value in X1 is 1,211, while to find out the t table value, manual calculations are needed using excel with the formula /2 ($df=n-k-1$). The alpha value used in this study is 5% so the t-table value on the X1 variable is 2.144. Therefore, the value of thit X1 is smaller than the t table which indicates the rejection of Ho, which means that the X1 variable (Metal Physical Facilities) does not affect the Y variable (Production Function). Furthermore, for the thit value on the X2 variable (Product Quality Control) of 2,723 which means reject Ho, which means that the value is greater than the t table so that the independent variable influences the dependent variable.

2. Discussion

Every company has great expectations in developing its business, be it a small to large scale company. This is because the company has a goal of achieving the vision and mission that has been instilled before the company runs, especially in the world of increasingly fierce competition in determining whether the company can survive in running its business. Therefore, the company must be able to develop by improving the quality of its products or services to attract consumers to repurchase, where this issue has a very large role in determining the company's role in developing its business in the future. If a company develops its business without paying attention to the quality of the product or service it markets, then in the long run the company will lose its customers because the real competition is another company that has good quality at the same price as the company, although in the short term the company can reduce costs. production.

If this happens by a company that does not pay attention to the quality of the products or services offered, is certain that the company will experience sales that continue to decline every decade and will result in bankruptcy. But this can be minimized, because every company has a guarantee program for the quality of the products or services offered which, as the company will continue to take control measures in maintaining quality by paying attention to the basic factors of the product and the production process from beginning to end so that the company continues to control the quality of the product. or service as expected. So, this will have an impact on improving the company's image in the eyes of consumers and will affect the company's income which is getting better.

According to Handoko (1999), quality is a component that is part of a product that makes the product more valuable. Then, Handoko continued that the efforts made to minimize losses during the product manufacturing process that caused the product to be damaged or the number of products remaining, it was necessary to have quality control which as this control is the most important key in maintaining and maintaining product quality so that it remains according to the standards that have been set. agreed.

Therefore, the four steps that need to be set in carrying out quality control are that the company determines the applicable standards before the product manufacturing process so that employees can know all kinds of limitations and what must be done to create a quality product. After creating a standard in the operation of the product, the company must assess whether the standard is to the company's conditions so that this will facilitate the manufacturing process because there is a clear soup. Then, the company must also take appropriate action as soon as possible on the problems that cause the product manufacturing process to be hampered this can affect the quality of a product. Finally, the company continues to evaluate in planning several improvements that hinder the production process so that this will have a beneficial impact on the company's image.

In addition, quality control has three approaches, namely the approach based on the company, the production process, and the final product. The first approach is the company where this approach is a step in selecting the materials needed as a foundation during the manufacturing process. The second approach is that the company makes monitoring efforts during the production process which is expected to be carried out by predetermined operational standards so that the resulting product is of high quality. The third approach is that the company makes efforts to maintain the quality of the products to be produced so that the final results obtained are what is expected.

The quality contained in a product is influenced by several factors as follows:

1. Reliability and Credibility mean the company can be trusted in terms of consistency of performance and services offered in producing a product.
2. Responsiveness means that the company has the will to prepare for the accuracy of services that will be offered through its employees, as well as timely service.
3. Competence means that the company has prepared everything related to the mastery of knowledge and skills needed when the service or manufacture of a product occurs.
4. Communication and Manners mean that the company always maintains friendly communication with consumers through notification of information related to the products offered so that consumers can understand what the company wants to convey.
5. The ability to solve problems (Problem Solving) means the company can understand what problems are being faced by consumers which then the company creates a solution through the products it produces. Not only that, but the company must also be able to minimize the risk of unpleasant things.

Some of the factors that have been described are efforts to control quality so that the level of product produced is always of high quality, where these efforts have the following objectives:

1. Minimizing the level of risk of errors during the production process so that the products produced are by procedures that will have an impact on improving quality.

2. The creation of good teamwork and according to applicable procedures will have a positive impact on the production process because of the involvement of employees who are mutually encouraged, especially motivational encouragement.
3. Reducing production costs for the risks faced during the production process, such as repair costs.
4. Improving the quality of the products offered to minimize the level of risk of complaints and rejections given by consumers will have a good impact on the good name of the company.

Quality control carried out by the company has each procedure applied, such as inspection, acceptance sampling, and control charts. Inspection is a company that conducts inspections of products that have been successfully produced by applicable standards so that this will find out which products are damaged or not by existing standards. This procedure is carried out to minimize the risk to stop the manufacturing process of damaged product factors. This procedure is carried out while the raw materials are still at the supplier's location, the raw materials arrive at the company's location before the product manufacturing process is carried out, during the product manufacturing process, after the manufacturing process is carried out until before the product is delivered to consumers.

The Acceptance Sampling Plan is the second procedure carried out in determining the decision-making whether the products that have been successfully produced are feasible or not. This is a series that must be carried out by the company in evaluation before sending the product to consumers so that this inspection will find products that are successfully produced and products that fail to produce. Control Chart is the third procedure in detecting the presence of products that deviate from the applicable standard guidelines where this procedure can show a graph of variations in the production process which means that defective products can be reduced in number.

The control chart has 2 functions, namely functions for variables and functions for attributes. The first function is a connection variable that can be measured, such as weight and volume. This first function control chart has the two most commonly used types, such as the Range Chart (R-chart) which means that this variable control chart shows the difference between the largest and smallest values in the sample so that this type of variable control chart shows process variability compared to showing the value average and Mean Chart (X-chart) which means that the variable control chart uses the average of the production process in which each sample at the production stage is measured through calculations and depictions through graphs, dots or points.

The second function is a control chart that uses sample measurements based on two classifications, such as good or bad, success or failure, and so on. This second function control chart has the two most commonly used types, such as the P-chart which means that the attribute control chart measures the proportion of product defects used as a sample, as this sample was taken during the period aimed at showing whether the sample This diagram is still within the range of existing limits and Diagram C (C-chart) which means that the attribute control chart measured is based on the average damaged product because this diagram is used when there is no calculation of the number of product damage proportions so this diagram

uses an average calculation The average that divides the total product damaged by the total sample.

Based on the research that has been done, the results obtained show that the producers are still very low in the level of awareness of quality control of the metal products produced so the problems faced are still very vulnerable to the low quality of the products offered. This causes the products produced still not to be by the existing standards and results in producers experiencing difficulties in competing in the business world so that the level of business development owned is still very low in attracting consumer interest.

Therefore, this research provides an outline solution that can assist producers in improving the quality of production in terms of infrastructure problems as follows:

1. The construction of adequate joint production houses can provide added value for business actors in the industrial sector/small craftsmen.
2. Product galleries as a showcase for products produced in the era of information and communication technology, physical galleries have begun to be reduced, and most entrepreneurs shift to virtual markets, one of which is through Marketplace, which is an intermediary platform that connects sellers and buyers. Examples of Indonesian marketplaces include Tokopedia, Bukalapak, Shopee, Lazada, and Blibli. Meanwhile, online shops do not require intermediaries. Every metalworker can have their online shop as a platform to sell products directly to buyers. So, the main difference between a marketplace and an online shop is the presence or absence of an intermediary. Creating an online store website is a top priority for metal craftsmen as online sellers, especially those who already have their brand. In addition to being a promotional tool, an online store website also increases customer trust in your brand.
3. Clean water facilities that support production activities that require good clean water facilities in the production process because they are basic even though they are not the main and main part, so water facilities and availability must be a concern.
4. Availability of support for more adequate equipment or machinery.
5. The layout of the source of metal raw materials to the processing process is adjusted to a good layout arrangement.
6. Raw materials and filtering suitability on the quality of metal materials also need to have a check team that sorts the metal raw materials in their processing.

In addition, this research also provides solutions in terms of natural resource problems as follows:

1. The development of raw materials for modification requires training. Modification training on raw materials needs to be held.
2. The efficiency and effectiveness of raw materials must be measured. This is because there is no synergy between workers, especially in terms of purchasing raw materials, in terms of efficiency has not been achieved because raw materials are still obtained from outside the area then techniques and tools have not been synchronized optimally, starting from the preparation of raw materials, processing, to the furnishing and finishing processes require well-measured raw materials.
3. Increased capacity/skills in product standardization. Standardization of metal products in the Indonesian National Standard is needed to strengthen the competitiveness of metals in

the country as well as to secure the domestic market, so that market absorption of national industrial products will be more optimal.

4. Developing modern technology starting from pressing, and cutting raw materials, and making metal products from cake moulds, tableware, and another furniture requires new modern technology that can improve quality and quantity.

CONCLUSION

Metal products are one of the superior products of Bogor Regency, which is located in Pasirmukti Village, Sukahati, and Tarikolot, Citeureup District. Some of the people have skills in metal crafts, and some functional products needed by the community such as baking sheets, corkscrews, various cake molds, pans, rice cake molds, trash cans, and others can be marketed directly to Citeureup Market or through collectors. But unfortunately, this condition is still felt to be lacking in raising market interest. This is because the design still looks monotonous, does not have a brand, and the workforce is only part-time, not too trained, and with modest wages. In addition, they are still weak in terms of product promotion, most of them do not have business licenses, management is still too simple and conventional or not professionally managed, and product stock is limited because they tend to serve orders only. The various inefficiencies that occur cause the prices of the products offered to be unable to compete in the market so they seem expensive.

The results of this study were based on a questionnaire that had been distributed to 17 metal craftsmen who helped with this research which had previously been distributed to 20 craftsmen in which this study managed to get 85% answers. The questionnaires distributed were divided into three different subjects, namely 18 questions about Production Function Control, 19 questions about Observation of Physical Facilities, and 11 questions about Product Quality Control.

The results of the validity test on the three variables are valid and so are the results of the reliability test which get reliable results between the variables. In addition, the result of R Square is 98.8% which has an influence and the rest is influenced by other variables outside the study. Then, the ANOVA test results get a sig value. of F is smaller than alpha (5%) which means the regression coefficient variable X1 (Metal Physical Facilities) is not the same as the regression coefficient X2 (Product Quality Control). Individual Regression Coefficient Testing results get variable X1 has no effect and variable X2 affects variable Y.

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