

## The Effect of Roll Maintenance Costs on Kiln Machines on the Efficiency of Expenditure on PT. XYZ

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### Abstract

PT. XYZ is a company engaged in the ceramics industry. One way maintenance is carried out on production machines is to use the cost of maintenance expenditure which aims to streamline and expedite the production process of both quality and quantity. In this study the cost pemeliharaanyang done is on a production machine roller kiln kiln mainly because if not maintained can quickly roll the kiln was dirty and broken so that it can directly increase the cost of expenditures (the smaller the efficiency of expenditures) for the purchase of a new kiln roll to replace the roll kiln dirty and broken. The method used in this study to determine the effect of roller kiln maintenance costs on the efficiency of spending is a statistic that is a quantitative method with simple linear regression (two variables). From the research results obtained regression equation  $y = 0.379 + 1.110 X$  diliat coefficients table from SPSS, Efficiency of expenditure will be worth 0.379 if the company no roll maintenance costs. Each one-time increase in the cost of engine maintenance roll kiln then the efficiency corporate spending rose by 1.110. The cost of engine maintenance roll kilns have strong relationships with significant spending efficiency by 97.9% results from SPSS can diliat model summary table, the efficiency of spending can be influenced by other factors is the use of EUT. Average roll kiln is unplugged as much as 105.73 in round roll 106 at a price of Rp 300,000 a roll when not using the average maintenance cost per month can pay for purchases of new roll of  $106 \times 300,000 = 31.8$  million. If using the maintenance costs (usage Grinding stone) at a price of Grinding stones, Rp. 1.800.000 to clean up the dirty roll kiln as many as 100-150 stems roll is clearly more efficient in spending compared With no use of maintenance costs.

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## I. Introduction

Production machines are one of the supporting tools to complete a job effectively and efficiently. A machine or equipment can be said to be damaged if the machine cannot perform its function properly, one of the causes of damage to a machine is human error that does everything outside the regulations that should be included in operating a machine. Damage to a machine will usually cause losses for the company due to the cessation of the production process to repair the machine. To avoid this, it is very important for the maintenance or maintenance department to design a maintenance schedule to minimize damage.

Machine maintenance is an activity carried out to maintain and maintain a machine or equipment by seeking repair or replacement of damaged components so that they remain in a condition ready to be operated properly so that production can run according to plan.

In PT. XYZ in kil engine components n roll parts is an item that is often damaged (broken) this is one of the wastes that must be overcome immediately so that the company can reduce the cost of paging, especially in the kiln engine, which has been carried out so far, the maintenance of the roll kiln that has been carried out has not been optimal, because the dirty roll in each month is still relatively high which can make the roll kiln damaged / broken.

Identify problems, namely:

1. Prevention methods so that the roll does not get dirty and damaged (broken) quickly
2. The importance of the role of kiln machine maintenance (roll kiln)

In this study, the author solved the problem so that the research did not deviate from the direction and purpose, and it can be known to what extent the research results can be utilized. These limitations include the following:

1. Maintenance is carried out to achieve efficiency in expenditure costs by means of roll maintenance on the kiln (grinda roll) machine.
2. Maintenance is carried out by grinding roll (the use of grinding stone) so that it can facilitate the activities of the production process.

Based on the above, the author formulates the problem as follows:

1. How to maintain a roll on a good kiln machine for efficiency of expenses costs
2. How much effect does roll maintenance have on kiln machines on the efficiency of expenditure costs

## II. Material and Method

This research is a type of kuantitative research with causal associative research methods. Causal associative research is research that aims to analyze the relationship between one variable and a variable.

Operational Variables :

1. Room requirements are the existence of a room, equipment and room equipment that supports to increase work effectiveness.
2. Room facilities that include room facilities and equipment.
3. Room infrastructure includes several supporting factors including lighting, decoration, windows, air conditioning and color management. These factors are very important influence to increase the work efficiency of employees.
4. The effectiveness of work in a measure of time, that is, the officer will make good use of the time if at the time the officer will save and borrow medical records.
5. Work effectiveness in a measure of cost, namely, the costs needed for room purposes, especially medical record storage space, have very large benefits in order to support the smooth running of services while working.
6. The effectiveness of work in a measure of accuracy, namely, the medical record storage room has met all factors that include facilities and infrastructure, so that when the medical record officer who will store and borrow the medical record file can do it accurately and precisely.

To obtain the data needed for processing in answering the problems studied in the study, a population is needed as a reference in a study. Based on this explanation, the population in this study were employees or officers who were in the RSIA XYZ medical record room, starting from the medical records section, outpatient registration, inpatient registration and polyclinic nurses.

No.	Part	Sum
1	Medical Records	6
2	Outpatient registration officer	10
3	Inpatient registration officer	10
4	Polyclinic nurses	4
	Sum	30

The technique in data collection used in this study is to use field *research* (*field research*), which is a data collection technique by researching or looking directly at the object under study with the intention of obtaining primary data, through: Observation , Questionnaire ( *questionnaire*), and *Literature research* (*Libary research*).

The instruments that need to be made, namely:

1. Instruments for measuring Spatial Planning.
  - a. Layout:
    - Physical condition of the room
    - Outpatient/inpatient registration layout and medical record room.

- The distance of the storage cabinets of one and the other.
- The location of the arrangement of office tools.
- Arrangement of the workbench.
- Location of medical records room and polyclinic

b. Air Conditioning :

- Air condition in the room
- Commonly used temperature.
- Air circulation in the room.
- Air humidity in the storage room

c. Color Layout :

- Air condition in the room
- Color harmony of office tools.
- The color of the floor of the room.
- Color harmony of storage cabinets.

d. Lighting System

- Light layout.
- Lighting that suits your needs.

2. Instruments for measuring the effectiveness of work.

a. Timeliness

- The time it takes to prepare the file.
- The time required when servicing patient admissions.
- The time required when transporting the patient to the polyclinic
- The time it takes to save the medical record file.
- The time it takes to record new patients.

b. Operational Cost Efficiency

- Costs for the maintenance of storage space.
- Costs for office stationery.
- The cost of patient service needs.
- Operational costs for insurance coverage patients.

c. Accuracy/Accuracy

- Accuracy of data inputting system
- The accuracy of the file storage system.

d. Job Targets :

- Services that have been provided.
- Smooth data service.
- The storage system that has been run.
- Smooth service in the medical record room.

Instrument trial results, tested through Data Validity and Data Reliability.

Data analysis techniques, through Descriptive Statistics, Analysis Requirements Test, Product Moment Correlation Analysis, Coefficient of Determination Analysis, Simple Linear Regression, and Statistical Hypothesis Test/ "t" Test.

### III. Results and Discussion

Validity tests are used to show the level of validity of research instruments meaning that instruments can be used to measure what should be measured. His decision on items/ items per realization can be considered valid where the result exceeds 0.30 ( $rs > 0.30$ ).

The results of the reliability test on the questionnaire for the implementation of spatial planning and work effectiveness obtained reliability coefficients ( $r_{11}$ ) of 0.972 and 0.982, respectively. So that the entire questionnaire can be declared reliable.

The results of the normality test can be ascertained that the model used is normally distributed, since the curve above forms a bell whose two sides widen to infinity.

Analysis of the Effect of Spatial Implementation on Work Effectiveness obtained a Pearson correlation value between spatial implementation and work effectiveness of 0.992. Thus it can be concluded that between the variables of spatial implementation and work effectiveness have a strong influence. And the magnitude of the influence of work effectiveness variables, can be influenced by the implementation of spatial planning by 98.41%.

The t-test between spatial implementation and work effectiveness can be known whether in fact the implementation of spatial planning has a positive influence on work effectiveness, and the calculation results obtained are  $dk = n-2 = 30-2 = 28$ , then a  $t_{table}$  of 1,701 is obtained. So the effect of spatial planning implementation (X) on the effectiveness of work (Y) in the t test, obtained the calculation results of  $41.134 > t_{table}$  1.701. Because the calculation of  $> t_{table}$ ,  $H_0$  = rejected and  $H_1$  = accepted, with the implementation of spatial planning has a significant positive influence on work effectiveness

## IV. Conclusion

The conclusions of the study on the influence of spatial implementation on the effect of work activities on RSIA XYZ are as follows; The implementation of spatial planning has a positive and very real effect on work effectiveness in the RSIA XYZ medical record room. Based on the results of the study described in the previous chapter, the results of the hypothesis obtained the regression equation:  $Y = 7.686 + 1.142X$ , which means that if the spatial implementation variable (X) is zero, then the value of the work effectiveness variable (Y) is 7.686. And every increase in the implementation of spatial planning by one unit, the effectiveness of work will increase by 1,142 units. And from the results of the analysis with the help of the SPSS 16.0 program, the value of the correlation coefficient of 0.992 was obtained and the result of calculating the coefficient of determination ( $R^2$ ) = 0.984. From the calculation results of the coefficient of determination of 98.41%, which shows the magnitude of the employee work effectiveness rate of 98.41% influenced by spatial planning while 1.59% was influenced

by other factors that were not explained in this study. Based on the descriptive results of the percentage, it can be known that the variables of spatial implementation have a positive and significant effect on the effectiveness of employee work as evidenced by t-count = 41.134 and t-table = 1.701 which means that t-count > t-table so that an increase in the implementation of spatial planning will increase employee work effectiveness

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