

How Interpersonal Communication And Physical Work Environment Affect The Employee' Performance At Quality Control Division Of PT. Bangun Beton

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Abstract

This research aims to determine the effect of interpersonal communication and physical work environment on the employees' performances of PT Bangun Beton Quality Control division -. This research was conducted with quantitative methods. The research population was 54 people using saturated samples. The study was conducted at PT Bangun Beton Quality Control Division on November 28 to May 29, 2019. Data was collected by questionnaire, and analyzed by IBM SPSS Statistic v.24. The results showed there was a significant negative effect between interpersonal communication on employee performance based on a partial test (t test) using a significance level of 0.05%, then there was a significant positive effect between the physical work environment on employee performance based on a partial test (t test) using significant level of 0.05%. The F test shows that interpersonal communication and physical work environment together have an influence on employee performance.

Keywords : Interpersonal communication, physical work environment and employee performance.

Introduction

Human resource management is one of the management that emphasizes on the employees' performance and the success of a company is based on the performance of employees itself. In principle, interpersonal communication and the physical work environment, is one of the important functions in human resource management (HRM), because with good interpersonal communication both will improve the employees' performance so that it can support the success of a company.

Another factor that affects employee performance is the physical work environment. The work environment is a very important component in carrying out work activities. Everything that is around the workers and which can affect themselves in carrying out the tasks that are charged, for example cleanliness, music, lighting, and others.

Theoretical Background And Hypothesis

Interpersonal Communication

According to (Nagelkerke, 2008) "interpersonal communication is a process using messages to gain meaning equality at least between two person in a situation that may have a same chance between the listener and the speaker.

(Interpersonal, Book, Devito, Devito, & College, 2013) stated that interpersonal communication is verbal and non-verbal interaction between (or even more than two) persons that depend on each other.

According to (aw sumarto, 2011) there are five characteristics of interpersonal communication:

1. Two-way message flow.

Interpersonal communication puts the source of the message and the receiver in a parallel position, so it stimulates the pattern of the two-way message distribution pattern.

2. Non-formal atmosphere.

Interpersonal communication usually takes place in an informal setting.

3. Immediate feedback.

Interpersonal communication usually brings the communicators face to face, so the feedback can be known immediately, both verbally and nonverbally.

4. Communication participants are in close proximity.

Interpersonal communication requires that communication participants are in close range, both at physical and psychological distances. Close distance in the physical sense, means that the actors are face-to-face, in a certain location and psychologically show the intimacy of relationships between individuals.

5. Communication participants send and receive messages simultaneously and spontaneously, both verbally and nonverbally. To increase the effectiveness of interpersonal communication, the utilization of the strength of verbal and nonverbal messages, to try to convince each other, by optimizing the use of verbal and nonverbal messages simultaneously, complementing each other strengthens according to the purpose of communication.

Physical Work Environment

According to (Summer & Requirements, 2011), states that "The work environment is all aspects of physical work, psychological work, and work regulations that can affect employee performance".

According to (NITISEMITO, 2012) states that "The work environment is everything that exists around the workers who can influence themselves in carrying out the tasks assigned".

According (Good & Kepemerintahan, 2012) states that generally, the type of work environment is divided into two:

1. The physical work environment is all physical conditions found around the workplace that can affect employees directly or indirectly.

The physical work environment can be divided into two categories, namely:

a. An environment that is directly related to employees. Such as: work centers, chairs, tables and so on ; and

b. Intermediary or general environment can also be called a work environment that affects the human condition for example: temperature, humidity, air circulation, lighting, noise, mechanical vibrations, unpleasant odors, colors, and others. To be able to minimize the influence of the physical environment on employees, the first step is to study humans, both about their physical and behavioral and physical aspects, and then use them as a basis for thinking about the appropriate physical environment.

2. Non-physical work environment.

Non-physical work environment is all conditions that occur relating to work relationships, both relationships with superiors and fellow co-workers, or relationships with subordinates.

Employee Performance

According to performance is "a real achievement displayed by a person after the person carries out his duties and roles in the organization."

According to (AA Mangkunegara, 2013) the understanding of employee performance (work performance) is "the work of quality and quantity achieved by an employee in carrying out their duties in accordance with the responsibilities given to him."

Performance indicators according (AA Mangkunegara, 2013), are as follows:

1. Performance Quality

Shows the neatness, accuracy, interrelatedness of work results without ignoring the volume of work. Good quality work can avoid the level of mistakes in completing a job that can be beneficial for the progress of the company.

2. Performance Quantity

Shows the large number of types of work performed at one time so that efficiency and effectiveness can be carried out in accordance with company goals.

3. Responsibility

Demonstrate how much the employee in accepting and carrying out his work, accountable for the results of work and the facilities and infrastructure used and work behavior every day.

4. Cooperation

Willingness of employees to participate with other employees vertically and horizontally both inside and outside the work so that the work will be better.

5. Initiative

Initiatives from within the company members to do work and overcome problems at work without waiting for orders from superiors or showing responsibility in work that is an obligation of an employee.

Research Methods

The method in this study uses quantitative methods by testing hypotheses using samples with data collection methods. Respondents in this study were 54 employees. The sample in this study uses a saturation sampling technique which the sample of population represents the amount of population

Variable Measurement

In this measurement, the measurement scale used is the Likert scale. Sugiono explained that the Likert scale is used to measure the attitudes, opinions and perceptions of a person or group of people about social events or phenomena that have been specifically determined by the researcher, hereinafter referred to as the research variable.

Data analysis technique

1. Validity Test

Validity test is used to find out whether the analyzed items analyzed are valid or not. This is related to the accuracy of the measuring instruments used in research.

2. Reliability Test

Reliability Test is a series of measurements or a series of measuring devices that have consistency if measurements made with measuring devices are carried out repeatedly. A questionnaire is said to be reliable if a person's answer to the statement is consistent or stable. Reliability testing using internal consistency is done by trying the instrument once, then the data obtained is analyzed with certain techniques.

3. Data Normality Test data Normality test is aimed at testing whether the regression variable confounding or residual has a normal distribution. As it is known that the t test and f test assume that the residual value follows the normal distribution.

4. Multicollinearity Test

Multicollinearity Test is the existence of a perfect linear relationship between some or all independent variables. Multicollinearity Test aims to test whether the regression model found a correlation between independent variables (independent), another way to detect the presence of multicollinearity is to look at the amount of VIF (Variance Inflation Factor) and tolerance (in the SPSS data processing output). If it has a VIF value of around 1-10 and tolerance numbers close to 1, it can be concluded that the regression model does not have multicollinearity problems.

5. Multiple Linear Regression Analysis

To measure the effect of interpersonal communication and physical work environment with employee performance using multiple linear regression analysis methods. The formula used is:

$$Y = a + b_1X_1 + b_2X_2 + e \quad (1)(Dwidayati, 2018)$$

Whereas:

Y = Dependent variable (employee performance)

a = Constant

X1 = Independent Variable 1

X2 = Independent Variable 2
 B1 = Regression coefficient
 b2 = Regression coefficient
 e = error

6. The Determination Coefficient Analysis

In correlation analysis there is a number called the coefficient of determination. The determination coefficient (DC) essentially measures some extent of the model's ability to explain the dependent variables which equal to the squared of the coefficient correlation (r^2). The formula is:

$$DC = r^2 \times 100\% \quad (2)(Nagelkerke, 2008)$$

Whereas:

DC = Determination Coefficient
 r^2 = The Coefficient Correlation

Hypothesis Testing

To ensure the results obtained through correlation considerations, so hypothesis testing must be performed to prove the results gained.

1. Partial Hypothesis Testing (T Test)

Decision making techniques used testing by t test statistics:

$$t = \frac{b-\beta}{s_b} \quad (3)(Witney, n.d.)$$

Whereas:

t = Arithmetic Value
 b = Sample Regression Coefficient
 β = Population Regression Coefficient
 Sb = Standardized Regression Coefficient Tool

a. Hypothesis Test The Effect of Interpersonal Communication on Employee Performance.

- 1) Ho: $\beta_1 = 0$, which there is no significant effect between interpersonal communication on the employees performance of PT Bangun Beton Quality Control Division.
- 2) Ha: $\beta_1 \neq 0$, which there is a significant influence between interpersonal communication on the employees performance of PT Bangun Beton Quality Control Division.

b. Hypothesis Test The Effect of Physical Work Environment on Employee Performance.

- 1) Ho: $\beta_1 = 0$, which there is no significant effect between the physical work environment on the employees performance of PT Bangun Beton Quality Control Division.
- 2) Ha: $\beta_1 \neq 0$, which there is a significant influence between the physical work environment on the employees performance of PT Bangun Beton Quality Control Division.

After obtaining the value of the t test results above, the next step that will be taken is to test the value using the hypothesis test on t. The hypothesis acceptance criteria are as follows:

- a. if $t_{arithmatic} < t_{table df = n-2}$ then Ho is accepted and Ha is rejected

b. if $t_{arithmetic} > t_{tabledf} = n-2$ then H_0 is rejected and H_a is accepted

2. Simultaneous Hypothesis Testing (Test F)

In this F test to prove whether the variables Interpersonal Communication (X1) and Physical Work Environment (X2), simultaneously have an influence on Employee Performance (Y) using the following formula:

$$F_{value} = \frac{R^2/k}{(1-R^2)/(n-k-1)} \quad (4)(Witney, n.d.)$$

Whereas:

R² = Multiple Correlation Coefficient

K = Number of Independent / independent variables

n = Number of Sample Members

a. Hypothesis of the Effect of Interpersonal Communication and Physical Work Environment on Employee Performance

1) $H_0: \beta_1 = 0$, meaning that there is no significant effect between interpersonal communication and physical work environment on the employees performance of PT Bangun Beton Quality Control Division.

2) $H_a: \beta_1 \neq 0$, meaning that there is a significant influence between interpersonal communication and physical work environment on the employees performance of PT Bangun Beton Quality Control Division.

The hypothesis acceptance criteria are as follows:

a. If $f_{arithmetic} > f_{tabledf} = n-3$ then H_0 is rejected and H_a is accepted., it means that there is a significant influence between interpersonal communication and physical work environment on employee performance

b. If $f_{arithmetic} < f_{tabledf} = n-3$ then H_0 is accepted and H_a is rejected, it means that there is no significant effect between interpersonal communication and physical work environment on employee performance.

Research Results And Discussion

1. Validity Test

Validity Test of Interpersonal Communication

Table 1.1 Validity Test of X₁ Variable Interpersonal Communication

Question	rvalue	rtable	Explanation
X1_1	0,537	>0,268	Valid
X1_2	0,569	>0,268	Valid
X1_3	0,532	>0,268	Valid
X1_4	0,639	>0,268	Valid
X1_5	0,430	>0,268	Valid
X1_6	0,797	>0,268	Valid
X1_7	0,776	>0,268	Valid
X1_8	0,492	>0,268	Valid

Source: Questionnaire which prossessed by SPSS

Validity Test of Physical Work Environment

Tabel 1.2 Validity Test of Physical Work Environment (X2)

Question	rvalue	rtable	Explanation
X1_1	0,401	>0,268	Valid
X1_2	0,588	>0,268	Valid
X1_3	0,634	>0,268	Valid
X1_4	0,625	>0,268	Valid
X1_5	0,517	>0,268	Valid
X1_6	0,673	>0,268	Valid
X1_7	0,548	>0,268	Valid
X1_8	0,506	>0,268	Valid

Source: Questionnaire which processed by SPSS

Validity Test of Employee Performance

Tabel 1.3 Validity Test of Employee Performance (Y)

Question	rvalue	rtable	Explanation
X1_1	0,427	>0,268	Valid
X1_2	0,686	>0,268	Valid
X1_3	0,670	>0,268	Valid
X1_4	0,639	>0,268	Valid
X1_5	0,429	>0,268	Valid
X1_6	0,746	>0,268	Valid
X1_7	0,360	>0,268	Valid
X1_8	0,710	>0,268	Valid

Source: Questionnaire which processed by SPSS

2. Reliability Test

Reliability Test of Interpersonal Communication

Table 1.5 Reliability Test (X₁)

Cronbach's Alpha	N of Items
.725	8

Source: Questionnaire which processed by SPSS

Based on the above categories interpersonal communication variables consist of 8 questions that represent the Cronbach's Alpha value of 0.725. Since the value of $0.725 > 0.60$, it can be said that the data above is reliable.

Reliability Test of the Physical Work Environment

Table 1.6 Reliability Test (X₂)

Cronbach's Alpha	N of Items
.692	8

Source: Questionnaire which processed by SPSS

Based on the above categories the physical work environment variable consists of 8 questions that represent the Cronbach's Alpha value of 0.692. Since the value of $0.692 > 0.60$, it can be said that the data above is reliable.

Reliability Test of employee Performance

Tabel 1.7 Reliability Test (Y)

Cronbach's Alpha	N of Items
.697	8

Source: Questionnaire which processed by SPSS

Based on the above categories of employee performance variables consisting of 8 questions that represent the Cronbach's Alpha value of 0.692. Since the value of $0.692 > 0.60$, it can be said that the data above is reliable.

Classic assumption test

1. Data Normality Test

Table 1.8 Kolmogorov Smirnov Normality Test

One-Sample Kolmogorov-Smirnov Test			Unstandardized Residual
	N		54
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		2.59713785
Most Extreme Differences	Absolute		.092
	Positive		.092
	Negative		-.074
	Test Statistic		.092
	Asymp. Sig. (2-tailed)		.200 ^{c,d}

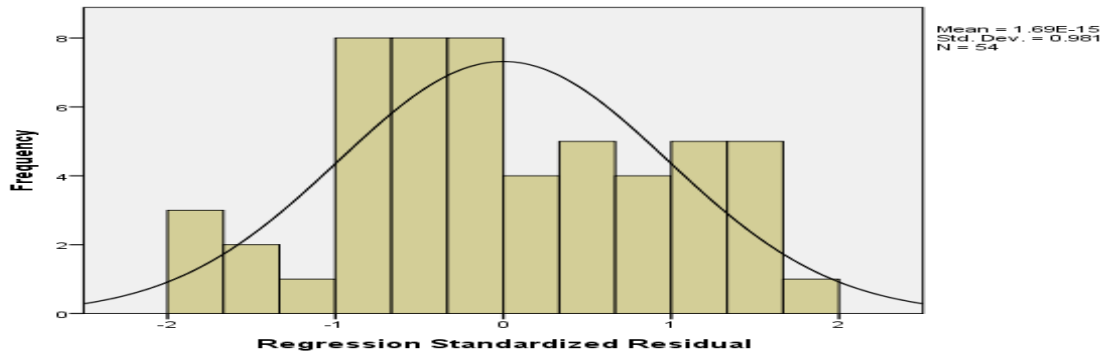
a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

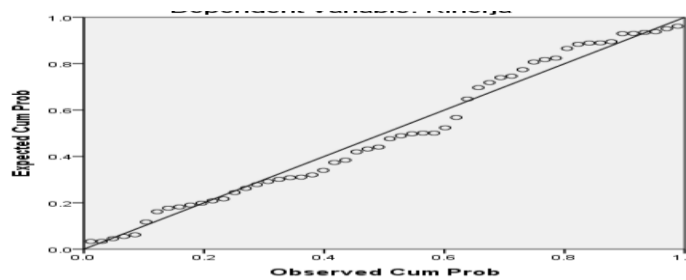
d. This is a lower bound of the true significance.

The basis for decision making in the normality test is if the significance value is greater than 0.05 then the data is normally distributed. Based on the calculation results in the table above, it can be seen the significance value of $0.200 > 0.05$, then it can be concluded that the data above is normally distributed.



Source: Questionnaire which processed by SPSS v.24

Figure 1.1 Histogram of Normality Test: Performance



Source: Questionnaire which processed by SPSS v.24

Figure 1.2 Result of Normality Test 2 : Normal Probability Plot Graphic
Dependent Variable: Performance

2. Multicollinearity Test

Table 1.9 Multikolinieritas Test
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	39.217	5.085		7.713	.000		
Interpersonal Vomunication	-.541	.157	-.496	-3.438	.001	.749	1.335
Physical Work Environment	.383	.141	.391	2.710	.009	.749	1.335

a. Dependent Variable: Performance

Source: Questionnaire which processed by SPSS v.24

From Table above it can be seen that Interpersonal Communication (X1) tolerance value $0,749 > 0,1$ and VIF value $1,335 < 10$, Physical Work Environment (X2) tolerance value $0,749 > 0,1$ and VIF value $1,335 < 10$. So it can be concluded that no there are symptoms of multicollinearity between independent variables in the regression model.

3. Multiple Linear Regression Analysis

Table 1.10 Multiple Linear Regression Analysis Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	39.217	5.085		7.713	.000
Interpersonal Communication	-.541	.157	-.496	-3.438	.001
Physical work Environment	.383	.141	.391	2.710	.009

a. Dependent Variable: Performance

Source: Questionnaire which processed by SPSS v.24

From the table above it can be concluded that:

$$Y = a + b_1X_1 + b_2X_2 + e$$

$$Y = 39,217 - 0,541 X_1 + 0.383 X_2 + e.$$

4. Determination Coeficien Analysis

Table 1.11 Determination Coeficien Test Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.452 ^a	.205	.174	2.648	1.234

a. Predictors: (Constant), LKF_, Kom_interpersonal

b. Dependent Variable: Performance

Source: Questionnaire which processed by SPSS v.24

The formula is:

$$\begin{aligned} \text{KD} &= R^2 \times 100\% \\ &= 0,452^2 \times 100\% \\ &= 0,205 \times 100\% \end{aligned}$$

The results of calculations with the SPSS v.24 program can be seen that the coefficient of determination (R square) obtained is 0.205. It means that 20.5% of employee performance can be explained by interpersonal communication variables and physical work environment, while the remaining 79.5% of employee performance is influenced by other variables not examined in this study.

Hyphothesis test

1. Parsial Hyphothesis Test (T-Test)

Table 1.12 T-Test Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	39.217	5.085		7.713	.000

Interpersonal Communication	-.541	.157	-.496	-3.438	.001
Physical Work Environment	.383	.141	.391	2.710	.009

a. Dependent Variable: Performance

source: Questionnaire which processed by SPSS v.24

a. Interpersonal Communication Hypothesis Test

From the results of the above coefficients data obtained sig value on Interpersonal Communication is 0.00. This sig value is smaller than the probability value of 0.05 or 0.01 < 0.05 then H_0 is rejected and H_a is accepted. The t-test value in interpersonal communication showed that the t-value was -3.438 while the t-table with a significance

Level of 5% with a two-way test and the degree of freedom (dk) = $n - k = 54 - 2 = 52$ was 2.00665. Based on these results, the tcount is in the area of rejection of H_0 or H_a accepted so it can be concluded that Interpersonal Communication partially has a negative and significant relationship with Employee Performance.

b. Hypothesis Test Physical Work Environment

From the results of the above coefficients data obtained sig value in the Physical Work Environment is 0.00. This sig value is smaller than the probability value of 0.05 or 0.009 < 0.05 then H_0 is rejected and H_a is accepted. The t-test value in interpersonal communication obtained the t-value was 2.710 while the t-table with a significance level of 5% with a two-way test and the degree of freedom (dk) = $n - k = 54 - 2 = 52$ was 2,00665. Based on these results, the tcount is in the area of rejection of H_0 or H_a accepted so that it can be concluded that the Physical Work Environment partially has a negative and significant relationship with Employee Performance

2. Simultaneous Hypothesis Testing (F-Test)

Tabel 1.13 Simultaneous Hypothesis Testing (F Test)

ANOVA^a

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	92.008	2	46.004	6.563	.003 ^b
	Residual	357.492	51	7.010		
	Total	449.500	53			

a. Dependent Variable: Performance

b. Predictors: (Constant), LKF_, Kom_interpersonal

Based on table 1.15 that simultaneous testing of Interpersonal Communication (X_1) and Physical Work Environment (X_2) on Employee Performance (Y). The F value of 6.563 is obtained with probability value (sig) = 0.003. F value (6.563) > F table (3.18), and sig value is smaller than the probability value (value 0.003 < 0.05); then H_0 is refused while H_a is accepted. This means that there is a significant influence

between Interpersonal Communication and Physical Work Environment on Employee Performance

Conclusion

1. There is a significant negative effect between Interpersonal Communication on Employee Performance based on the T Test, resulting t-value of X_1 of $-3.438 > t$ table of 2.00665 using a significance level of 0.05%, with a significance level of $t < 0.005$ ($0.001 < 0.005$). This might be caused by holding meetings or discussions oftenly in a certain period of time and causing employees to feel bored and ideas to be issued at meetings or discussions are not useful and have an impact on decreasing employee performance. Nevertheless it still has a significant effect if improvements are made such as holding meetings which does not have to be done oftenly..
2. There is a significant positive effect between the Physical Work Environment on Employee Performance based on the T Test, resulting in t-value of X_2 of $2.710 > t$ table of 2.00665 using a significance level of 0.05%, with a significance level of $t > 0.005$ ($0.009 > 0.005$)
3. There is a significant influence between Interpersonal Communication and Physical Work Environment on Employee Performance based on the F Test, resulting F arithmetic from X_1 of $6.563 > f$ table of 3.18 using a real level of 0.05%. Significant value is smaller than probability value (value $0.003 < 0.05$)

Suggestions

1. In the Interpersonal Communication variable, it is recommended that the company not to hold meetings or discussions oftenly in a certain period of time which will cause boredom, it makes ideas to be issued at meetings or discussions are not useful and have an impact on decreasing employee performance.
2. In the variable Physical Work Environment it is recommended that companies provide equipment such as earphones for employees so that they are not disturbed due to environmental noise in the workplace.
3. In the Employee Performance variable it is recommended that the company assigns jobs to employees on target so that employees don't make mistakes oftenly.

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