



## ANALYSIS OF THE EFFECT OF OCCUPATIONAL SAFETY AND HEALTH ON EMPLOYEE PERFORMANCE OF PT. WIJAYA KARYA (PERSERO) TBK. AT THE NAYUMI SAM TOWER MALANG PROJECT

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### Abstract

Human resources are one of the factors that affect production in a company Because without human company could not go on it is now up to the present time the individual human being at main asset an enterprise is administered a set of production activities, This was because human beings have thought and your moral understanding, a feeling, energy, the level of knowledge, and creativity to accomplish a purpose a public social security agency. Maximum performance can be influenced by workplace safety and health.

This study attempts to know how big the influence of work safety and health on performance employees on PT. Wijaya Karya Nayumi Sam Tower Malang Project. The research was conducted between January 2018 and May 2018. Methods used are the quantitative method, technique data collection used is study literature and spreading the questionnaire shown to an employee on PT. Wijaya Karya Nayumi Sam Tower Malang Project As many as 65 people. Sample selection is a non probability sampling techniques saturated sample. A method of analysis of data used was a validity test, reliability test, normality test, multiple linear regression, t test and f test and the coefficients of determined.

The research results show that simultaneously variable work safety and health simultaneously influences employee performance at Nayumi Sam Tower Malang project As much as 50.4% while the rest is influenced by the other factors that not investigated in this study. Key Word: Safety, health and employee performance

## **INTRODUCTION**

The increasing number of competition in the industrial sector that is faced by small and large companies to survive and compete is very much needed human resources, usually called employees. Human resources are very important in determining the success in terms of production in a company because without people the company cannot run. In fact, until now humans are the main asset of a company in carrying out a production activity.

This is because humans have thoughts, feelings, energy, knowledge, and creativity to achieve goals in a company. Along with the progress of the times, the industrial world has also experienced developments in the field of knowledge in technology, this has encouraged companies to improve the skills and knowledge of human resources. With the development of technology and innovation, it can bring convenience in terms of production, but besides that, it can also raise the risk of work accidents that may occur.

Errors in the use of equipment while doing work, such as the absence of personal protection, not complying with work regulations that have been made. This can create a danger that results in financial losses and can also cause a decrease in the health level of employees.

Occupational health is a condition where workers are free from physical and physical disturbances that are found in the work environment. Health risks can occur due to work environment factors, for example, a person works beyond the limit of human capabilities within a predetermined normal time and an environment that can cause stress or physical disturbance, while work safety is a safe condition and avoid suffering and damage, as well as other losses such as the use of machines, equipment, materials, and processing processes, work floors and work environment and work methods used. Occupational safety risks can be seen from aspects of the work environment that can trigger fires, electric shocks, cut limbs, wounds, fractures, sprains, bruises, and damage to limbs.

Safety work always relating to human work activities both in the manufacturing industry, which involves machinery, equipment, material handling of pressure vessel steamers, work equipment, materials and processing processes, workplaces and their environment and ways of doing work, as well as service industries involving technological equipment sophisticated, such as elevators, escalators, cleaning equipment buildings, means of transportation and others. According to Suparyadi (2015: 398), Work safety can be defined as a condition in which employees carry out their work limitedly from the possibility of accidents so that they do not feel worried when they have an accident. Occupational health is included in the science of health/medicine and its orthotics, which aims to ensure that workers/society obtain the highest possible health status, both physically, mentally, and socially, with preventive and quantitative efforts, against diseases or health problems caused by factors- factors of work and work environment and against common diseases.

## **METHODS**

### **Human Resource Management**

Human resource management plays a determining role in the life of an organization, namely how well the organization performs, how well the organizational strategy can be implemented, and how far the predetermined goals can be achieved.

Then several experts expressed their opinions on human resource management, among others, according to Suparyadi (2015: 2) "Resource management Human power is a system that aims to influence the behavior, attitudes, and performance of employees to be able to make an optimal contribution in achieving company goals.

Based on the definitions of the experts above about human resource management, the authors argue that human resource management is a process to regulate the relationships and roles of the workforce which consists of planning, organizing, implementing and controlling and influencing the attitudes, behavior, and performance of employees to be able to provide an optimal contribution to achieve the goals set by the company.

### **Human Resource Management Function**

According to Hasibuan (2013: 21), human resource management describes the functions of

human resource management as follows:

- a. Planning
- b. Organizing.
- c. Briefing
- d. Control
- e. Procurement

### **Human Resource Management Objectives**

According to Sunarto (2004: 3) states that: Human Resource Management has objectives, namely:

- a. Organizations whose job is to find and maintain a good workforce, trustworthy and highly motivated, as required.
- b. Increase and improve the inherent capacity of humans, be it abilities, contributions, and abilities to the company.
- c. Develop high-performance work systems including rigorous recruitment and selection procedures, performance-dependent compensation and incentive systems, management development, and training activities related to business needs.
- d. Develop highly committed management practices that recognize that employees are valued stakeholders in the organization and help foster a climate of cooperation and mutual trust.
- e. Creating a climate that is productive and harmonious can be maintained

### **Work safety**

According to Suparyadi (2015: 398) "Safety work, could be defined as a condition in which employees carry out their work with a limited possibility of an accident so that they do not feel worried about having an accident".

From several definitions of work safety according to the experts above, the authors conclude that work safety is a protection and prevention from work accidents and provides a sense of security to every employee in every job so that they can avoid work accidents that result in physical injury in the work environment.

### **Work Safety Purpose**

Based on Law No. 1 of 1970 on work safety. In it, there are 3 (three) main objectives in the Implementation of K3 based on Law No. 1 of 1970 concerning Work Safety, including:

- a. Protect and ensure the safety of every workforce and others in the workplace.
- b. Ensure every production source can be used safely and efficient.
- c. Production resources are maintained and used safely and efficiently.

### **Types of Work Safety**

The types of workplace safety that are used in a company are as follows:

- a. Safety Helmet
- b. Safety Belt and Strap
- c. Boots
- d. Protective Shoes
- e. Masks/face shields
- f. Earmuffs
- g. Safety Glasses
- h. Gloves

### **Work Safety Indicator**

Indicators of safety work according to Sedarmayanti (2009: 118) consists of 3 (three) factors, including:

- a. Work environment factors.
- b. Human factors (employees)
- c. Work tool and machine factors

### **Occupational Health**

Occupational health is an important matter and must receive special attention from the employer. Because the health program can provide benefits for employees materially because employees are more enthusiastic because their health is guaranteed.

According to Suparyadi (2015: 398), occupational health is: "It is a physical, mental, and social condition and not just the absence of illness or weakness when carrying out a job. Occupational health is a source of daily life for employees, including when they carry out their work, because, without health, employees cannot carry out their work properly".

From the description, it can be concluded that occupational health is an action taken to maintain the physical and mental resilience of workers from disorders/diseases so that in carrying out employees' work feels healthy.

### **Types of Occupational Health**

Types of occupational health according to Flippo, in (Sibarani Mutiara, 2012: 113), occupational health is divided into 2 (two), namely:

- a. Physical Health
- b. Mental health

### **Occupational Health Goals**

Opinion Organization labor internationally, the goals of occupational health are:

- a. Promotion and maintenance of the physical, mental and social health of workers
- b. Prevention of health problems caused by working conditions
- c. Protection of workers from risk factors that interfere with health
- d. Placement and maintenance of workers in a work environment that is suitable for their physical and psychological abilities.
- e. Everyone's adjustment to their job.

### **Occupational Health Factors**

According to Suparyadi (2015: 399), several factors can cause occupational health problems, namely:

- a. Physical factors
- b. Chemical Factors
- c. Biological factors.
- d. Ergonomics / philosophy faculty.
- e. Psychological mental factors

### **Occupational Health Indicators**

According to Manullang (2000: 87), indicator occupational health includes:

- a. Medical work environment
- b. Workforce health facilities
- c. Workforce health maintenance is a workforce health service.

### **Employee performance**

Employee performance or it can be interpreted as work performance is the quantity and quality of work achieved by an employee at one periodic time or which has been determined in completing the work or task according to the responsibilities and obligations are given by a company to him.

According to Moerinho in Ma'ruf (2014: 4) "Performance or performance is a description of the

level of achievement of the implementation of an activity program or policy in realizing the goals, objectives, vision, and mission as outlined in the strategic planning of an organization "

Based on the above definitions, the authors argue that performance is a result that has been achieved through processes carried out to meet the needs of the company according to the level of work that has been loaded.

### **Factors that affect employee performance**

As a leader in an organization, of course, he realizes the difference in performance between one employee and another employee who is under his supervision. Even though employees work in the same scope and space, their abilities and productivity are not the same. In outline differences in terms of performance can be caused by two factors including individual factors and work situations.

According to Mathis and Jackson (2011 10: 113), three main factors affect individual performance, namely:

- a. Individual ability
- b. The level of effort invested
- c. Organizational support

### **Performance Indicators**

Performance indicators according to Anwar Prabu Mangkunegara (2013: 75), are as follows:

- a. Work quality
- b. Working quantity
- c. Responsible
- d. Cooperation.
- e. Initiative

### **Performance assessment**

According to Mathis and Jackson (2011: 378), employee job appraisals have two common uses in organizations, namely:

- a. Administrative use
- b. Development use

### **Purpose and Benefits of Performance Appraisal**

According to Wilson Bangun (2012: 232), the objectives and benefits of performance appraisal include:

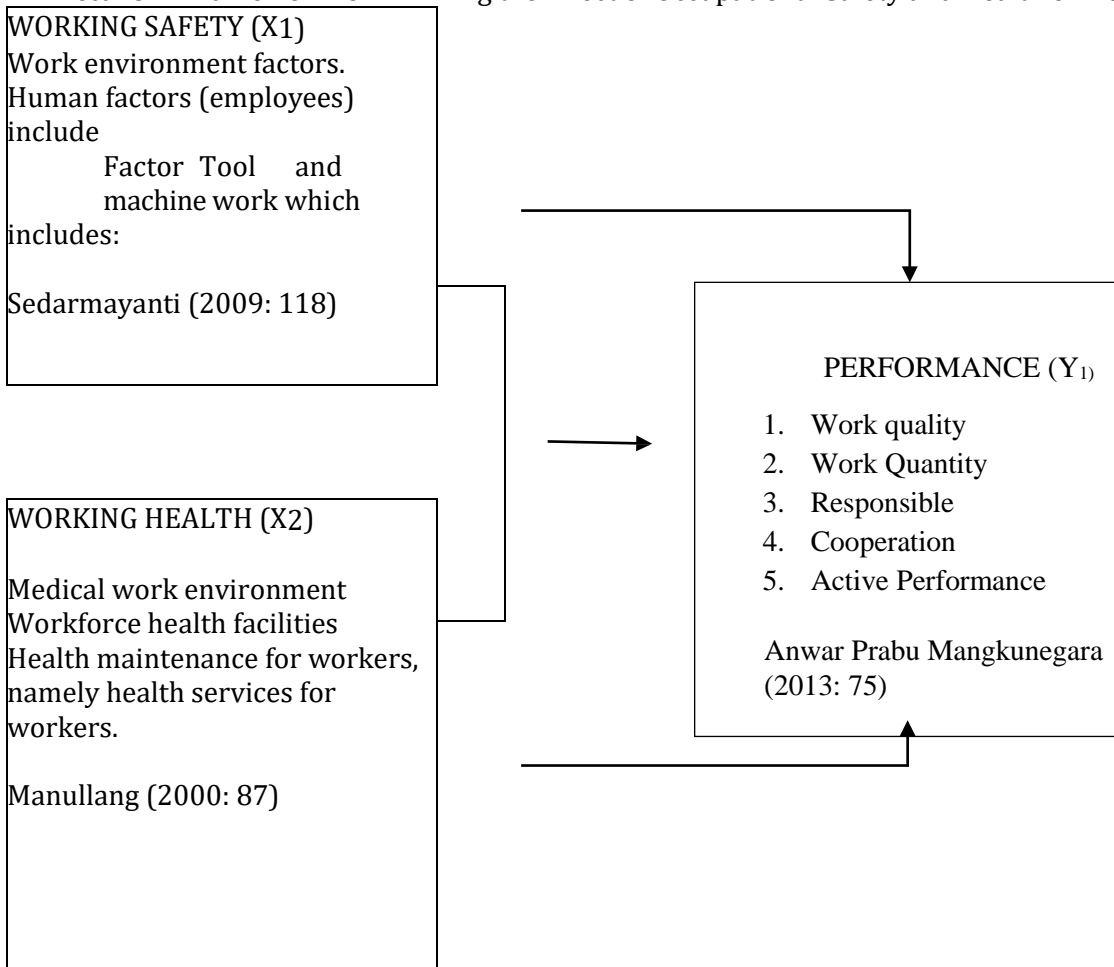
- a. Evaluation between individuals in the organization
- b. Development self every individual in the organization
- c. System maintenance

### **Framework**

The thinking framework is a synthesis of the relationship between variables which is compiled from the various theories that have been described. Variables can be divided into 2 (two), namely the independent variable or independent variable (X) and the dependent variable or the dependent variable (Y). An Independent variable or independent variable is a variable that can influence or cause the change or the emergence of the dependent variable (dependent variable). Meanwhile, the dependent variable or the dependent variable is the variable that is influenced or becomes the result there are independent variables (Sugiyono Research Methods 2017: 60).

Author describe definitively the concept of influence which is defined as the relationship of interest between the free variable and the dependent variable which is described as follows:

**Picture 1.** Framework for Thinking the Effect of Occupational Safety and Health on Performance



This research was conducted to test whether there is a significant influence between occupational safety and occupational health on employee performance at PT. Wijaya Karya Project Nasumi Sam Tower Malang.

### Hypothesis

Based on the framework thought above the author can describe that:

#### Partial hypothesis

- There is a safety effect on employee performance at PT. Wijaya Karya (Persero) Tbk.
- There is an effect of occupational health on employee performance at PT. Wijaya Karya (Persero) Tbk.

#### Simultaneous hypothesis

- There is an effect of occupational safety and health on employee performance at PT. Wijaya Karya (Persero) Tbk.

## METHODS

### Place and time of research

In thesis research, accurate data is needed to support and complete the contents of this thesis. So to get these data the authors researched PT. Wijaya Karya Div 1 (Persero) in the Malang Tower project which is located on Jl. DI.Panjaitan No.Kav 9-10 Cipinang Cempedak, Jatinegara - East Jakarta.

The research time required is four months, from March 2018 to July 2018, and during that time the authors collect data related to the thesis.

### **Types and Sources of Data**

In this study, the types of data used are primary data and secondary data.

1. Type of Data
  - a. Qualitative Data
  - b. Quantitative Data
2. Data source
  - a. Primary data
  - b. Secondary Data

### **Method of collecting data**

Field Research This research was conducted by the author by conducting a survey in the company on the Malang tower project. In this field research information can be obtained through:

- a. Interview
- b. Observation
- c. Questionnaire
- d. Library Research

### **Research variable**

#### **Dependent Variable (Variable Y)**

Namely a variable whose value is influenced by the independent variable. The dependent variable of this study is performed. According to Moerinho in ma'ruf (2014: 4)

"Performance is a description of the level of achievement of the implementation of an activity program or policy in realizing the goals, objectives, vision, and mission as outlined in the strategic planning of an organization".

#### **Independent Variable (Variable X)**

##### **a. Work Safety (X1)**

According to Suparyadi (2015: 398) "Work safety can be defined as a condition in which employees are in doing work with limited from possibility the occurrence of an accident so they don't feel worried about having an accident".

##### **b. Occupational Health (X2)**

According to Hanifah (2009: 136) "Occupational health is a specialization in health / medical science and its practice which aims to make the working community gain degrees the highest possible health, both physically, mentally, and socially with preventive and curative efforts against diseases/health problems caused by factors of work and work environment, as well as general illnesses.

### **Population and Sample**

#### **1. Population**

In this study, what makes the population is the number of employees at PT. Wijaya Karya Div 1 (Persero) in the Malang Tower project.

#### **2. Sample**

The sample is a part of the population whose characteristics are to be studied and are considered to be representative of the entire population. So the sample to be used in this study was 65 respondents.

The research method used was random sampling that is all population members have the same opportunity to be selected randomly / randomly as part of the sample in the study.

### Instrument Test

According to Sugiyono (2009: 132), the Likert scale is used to measure the characteristics, opinions, and perceptions of a person or group of people about social phenomena. So that to find out the measurement of how much the respondent's answer in this study which uses a research instrument in the form of a questionnaire, the author uses the Likert scale method (Likert's Summated Ratings).

In measuring respondents' answers, filling out a questionnaire on occupational safety and health on employee performance was measured using a Likert scale, with the following levels:

Table 1. Assessment Guidelines

Assessment Guidelines on the Questionnaire Questions		
No.	Scoring scale	Score
1	Very good	5
2	Good	4
3	Pretty good	3
4	Not good	2
5	Not very good	1

A good research instrument (questionnaire) must meet the requirements, namely valid and reliable. To determine validity and reliability. Because the validity and reliability of the questionnaire needs to be done because the validity and reliability testing aims to determine whether the questionnaire that has been distributed gets the data

The results of this study are valid and reliable, therefore, the authors will also do these two tests on the research instrument (questionnaire).

### Validity test

The validity test is used to test whether the items compiled based on the variable operational concept and their indicators are valid or invalid. A questionnaire is said to be valid if the questions on the questionnaire can reveal something that will be measured by the questionnaire (Ghozali, 2011). The validity test can be done by calculating the correlation between the scores of each question and the total score of the questions. The validity of the data is measured by comparing  $r_{count}$  and  $r_{table}$ , where: if  $r_{count} > r_{table}$  with a significance of 0.5, the questionnaire can be said to be valid.

### Reliability Test

A reliability test is a tool used to measure the questionnaire which is an indicator of the variable. A questionnaire is said to be reliable or reliable if the answers from respondents to questions are consistent or stable over time (Ghozali, 2013). To measure the reliability test using the Cronbach's Alpha statistical test. A constructor variable is declared reliable if the Cronbach's Alpha value is  $> 0.60$ .

### Data Analysis Techniques Data Normality Test

Each data used in this study must pass the data distribution normality testing phase. This test aims to test whether in the regression model, the independent variable (independent) and the dependent variable (dependent) both have a normal distribution or not. A good regression model is to have normal data distribution and close to normal.

The first way to interpret the normality of the data is by making the following hypothesis:

$H_0$ : Data is normally distributed

$H_a$ : Data is not normally distributed



The second step determines the criteria for testing the hypothesis as follows:

If significant > 0.05, then H<sub>0</sub> is accepted and H<sub>a</sub> is rejected

If significant < 0.05, then H<sub>0</sub> rejected and H<sub>a</sub> accepted

In this study, the One-Sample Kolmogorov-Smirnov Test was used which aims to test the hypothesis that there is no difference between the two distributions or to determine whether the data from each variable is normally distributed.

### Multiple Linear Regression Analysis

Multiple linear regression analysis was used to determine the effect of the independent variable, namely occupational safety and health (K3) on the dependent variable, namely employee performance. The analytical method used in this research is to use multiple linear regression analysis techniques to obtain a comprehensive picture of the relationship between one variable and another. The data analysis technique in this study can be formulated as follows:

$$Y = a + b_1X_1 + b_2X_2$$

Where:

Y = Performance Employees

X<sub>1</sub> = Work Safety

X<sub>2</sub> = Occupational Health

a = Constant

b = Regression Coefficient

### Hypothesis testing

1. Determination Coefficient Test (R<sup>2</sup>)
2. The T-test (partial)
3. F test (Simultaneous)

## RESULTS AND DISCUSSION

### Validity test

Test validity used as a tester is items that are arranged based on the open concept variable along with valid indicators is valid. The validity test is used as a measure of whether or not a questionnaire is valid. A questionnaire is said to be valid if the questions in the questionnaire can reveal something that is measured by the questionnaire.

Table 2. Validity Test Results of Work Safety Variables (X<sub>1</sub>)

Question Number	R-pearson	r-table	Information
1	0.374 (**)	0.244	Valid
2	0.643 (**)	0.244	Valid
3	0.728 (**)	0.244	Valid
4	0.404 (**)	0.244	Valid
5	0.468 (**)	0.244	Valid
6	0.438 (**)	0.244	Valid
7	0.539 (**)	0.244	Valid
8	0.709 (**)	0.244	Valid
9	0.426 (**)	0.244	Valid
10	0.491 (**)	0.244	Valid

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

Source: Output of SPSS version 22

Based on table 2 the work safety validity test (X1) all statements show the validity results exceeding the r table with a significance level of 5% and  
The number of samples of 65 is 0.244. Thus all indicators are declared valid.

Table 3. Validity Test Results of Occupational Health (X2)

Question Number	Rpearson	rtable	Information
1	0.268 (*)	0.244	Valid
2	0.540 (**)	0.244	Valid
3	0.594 (**)	0.244	Valid
4	0.496 (**)	0.244	Valid
5	0.407 (**)	0.244	Valid
6	0.436 (**)	0.244	Valid
7	0.620 (**)	0.244	Valid
8	0.607 (**)	0.244	Valid
9	0.292 (*)	0.244	Valid
10	0.358 (**)	0.244	Valid

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

Source: Output of SPSS version 22

Based on table 3, the occupational health validity test (X2) all statements show the validity results exceed the r table with a significance level of 5% and  
The number of samples of 65 is 0.244. Thus all indicators are declared valid.

Table 4. Validity Test Results of Performance Variables (Y)

Question Number	Rpearson	rtable	Information
1	0.687 (**)	0.244	Valid
2	0.466 (**)	0.244	Valid
3	0.384 (**)	0.244	Valid
4	0.633 (**)	0.244	Valid
5	0.628 (**)	0.244	Valid
6	0.705 (**)	0.244	Valid
7	0.488 (**)	0.244	Valid
8	0.705 (**)	0.244	Valid
9	0.764 (**)	0.244	Valid
10	0.616 (**)	0.244	Valid

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

Source: Output of SPSS version 22

Based on table 4, the performance validity test (Y) of all statements shows that the validity results exceed the r table with a significance level of 5% and the number of samples of 65 is 0.244. Thus all indicators are declared valid.

### Reliability test

A reliability test is a tool used to measure the questionnaire which is an indicator of the variable. A questionnaire is said to be reliable or reliable if the answers from respondents to questions are consistent or stable over time.

Table 5. Work Safety Reliability Test Results (X1)

#### Reliability Statistics

Cronbach's Alpha	N of Items
.721	10

Source: Output of SPSS version 22

Judging from the results of table 5, it shows that the work safety variable indicator (X1) has a fairly large alpha coefficient of 0.721 so that the data is reliable. Because the variables that are said to be reliable are those that give Cronbach's Alpha value > 0.60.

Table 6. The results of the Occupational Health reliability test (X2)

#### Reliability Statistics

Cronbach's Alpha	N of Items
.613	10

Source: Output of SPSS version 22

Judging from the results of table 6, it shows that the variable indicator of occupational health (X2) has a fairly large alpha coefficient of 0.613 so that the data is reliable. Because variables that are said to be reliable are those that give Cronbach's Alpha value > 0.60.

Table 7. Performance reliability test results (Y)

#### Reliability Statistics

Cronbach's Alpha	N of Items
.813	10

Source: Output of SPSS version 22

Judging from the results of table 7, it shows that the indicator of employee performance variables

has a fairly large alpha coefficient of 0.813, so the data is reliable. Because the variables that are said to be reliable are those that give Cronbach's Alpha value > 0.60.

#### Data Analysis Techniques Data Normality Test

Each data that used in this research must pass the data distribution normality testing phase. This test aims to test whether in the regression model, the independent variable (independent) and the dependent variable (dependent) both have a normal distribution or not. A good regression model is to have normal data distribution and close to normal.

Table 8. Kolmogorov-Smirnov Test Results

#### One-Sample Kolmogorov-Smirnov Test

		X1	X2	Y
N		65	65	65
Normal Parameters <sup>a</sup> , b	Mean	33.46	32.20	35.31
	Std. Deviation	4,395	3,679	4,465
Most Extreme Differences	Absolute	.173	.171	.231
	Positive	.173	.171	.231
	Negative	-.123	-.136	-.106
Statistical Test		.173	.171	.231
Asymp. Sig. (2-tailed)		.000 <sup>c</sup>	.000 <sup>c</sup>	.000 <sup>c</sup>

Test distribution is Normal.

Calculated from data.

Lilliefors Significance Correction.

Source: Output of SPSS version 22

Data that is normally distributed is indicated by a significant value above 0.05 or 5%. The results of normality testing on 65 data samples, the results are shown in Table 7 above, indicating that the variables of work safety (X1), occupational health (X2), and performance (Y) have significance values respectively 0.173, 0.171, and 0.231. The normality test results show the significance level of work safety (X1), occupational health (X2), and performance above 0.05 means that the data is normally distributed.

#### Multiple Linear Regression Analysis

Multiple linear regression analysis is used to determine how much influence the independent variable, namely occupational safety and health (K3), has on the dependent variable, namely employee performance. The analytical method used in this research is to use multiple linear regression analysis techniques to obtain a comprehensive picture of the relationship between one variable and another.

Table 9. Multiple Linear Regression Analysis

#### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	7,783	3,731		2,086	.041
X1	.572	.112	.563	5,117	.000
X2	.261	.133	.215	1,952	.055

a. Dependent Variable: Y

Source: Output of SPSS version 22

Based on Table 9, the results of the analysis above, the value of a (constant value) is 7.783 and the value of work safety (X1) is 0.572 and occupational health (X2) is 0.261. Based on the constant and coefficient values, the regression equation is obtained:

$$Y = 7,783 + 0,572X_1 + 0.261 X_2$$

From this equation, it can be seen that the value of 7.783 is a constant value which explains that if the values of X1 and X2 are equal to zero or constant, the value of Y is equal to 7.783.

The constant value is 7,783. The magnitude of the constant indicates that if the variables independent are assumed to be constant, then the dependent variable is the variable performance (Y) of 7,783%.

The coefficient of the work safety variable (X1) of 0.572 indicates that each increase in work safety (X1) of 1% will cause an increase in performance (Y) of 05.72% assuming the other factors are constant.

The coefficient of occupational health variable (X2) is 0.261, meaning that every 1% increase in occupational health will lead to an increase in performance (Y) of 0.261% assuming the other factors are constant.

## Hypothesis testing

### Determination Coefficient Test (R<sup>2</sup>)

The coefficient of determination R<sup>2</sup> is intended to determine how much the percentage of the overall contribution (contribution) to the independent and dependent variables. The coefficient of determination (R<sup>2</sup>) is used to determine the percentage effect of the independent variable on the dependent variable.

Table 10. Results of the Coefficient of Determination (R<sup>2</sup>) Work Safety (X1)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.688 <sup>a</sup>	.473	.465	3,267

a. Predictors: (Constant), X1

Source: Output of SPSS version 22

In table 10 above, you can get a regression model with the coefficient of determination (R Square) of 0.473 or 47.3%. Employee performance (Y) can be influenced by work safety (X1) while the rest (100% -47.3% = 52.7%) employee performance (Y) is influenced by other things or variables.

Table 11. Results of the coefficient of determination (R<sup>2</sup>) for occupational health (X2)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.542 <sup>a</sup>	.294	.283	3,781

a. Predictors: (Constant), X2

Source: Output of SPSS version 22

In table 11 above, you can get a regression model with the coefficient of determination (R Square) of 0.294 or 29.4%. Employee performance (Y) can be affected by health work (X2) while the rest (100% -29.4% = 70.6%) employee performance is influenced by things or other variables.

Table 12. Results of the Coefficient of Determination (R2)

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.710 <sup>a</sup>	.504	.488	3,196

a. Predictors: (Constant), X2, X1

Source: Output of SPSS version 22

In table 12. above, you can get a regression model with a coefficient of determination (R Square) of 0.504 or 50.4%. This coefficient of determination shows that 50.4% of employee performance (X1) can be affected by work safety (X1) and occupational health (X2) while the rest (100% -50.4%) = 49.6%) employee performance (Y) is influenced by other things or variables.

**T test (partial)**

This test is conducted to determine the effect of the independent variable partially on the dependent variable. This test can be done by comparing t count with t table or by looking at the significance column in each t count.

Table 13. Coefficients t test results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	7,783	3,731		2,086	.041
X1	.572	.112	.563	5,117	.000
X2	.261	.133	.215	1,952	.055

a. Dependent Variable: Y

Source: Output of SPSS version 22

Based on table 13, the t statistical test can explain the effect of the variables partially as follows:

a. Effect of work safety (X1) on employee performance (Y)

Based on the significant t value of 0.000 at a significant level of 0.05, it can be concluded that 0.000 < 0.05 means that work safety (X1) has a significant effect on employee performance (Y). Based on the t value of 5.117 with a significant value of 0.000 (less than 0.05). By using the t table obtained t table of 1.669. The results of this study indicate that t count 5,117 > t table 1,669 so that H0 rejected and Ha be accepted. Work safety (X1) partially has a positive effect on employee performance (Y).

b. Effect of occupational health (X2) on employee performance (Y)

Based on the significant t value of 0.055 at a significant level of 0.05, it can be concluded that 0.055 > 0.05 means that occupational health (X2) has a significant effect on employee performance (Y).

Based on the t value of 1.952 with a significant value of 0.055 (greater than 0.05). By using the t table, the obtained t table is 1.699. The results of this study indicate that  $t_{count} 1.952 > t_{table} 1.699$  so that  $H_0$  rejected and  $H_a$  be accepted. This means that occupational health (X2) partially has a positive effect on employee performance (Y).

### F test (Simultaneous)

The f statistical test uses independent variables that are entered into the regression model to determine whether there is a joint (simultaneous) influence on the dependent variable.

Table 13. F Test Results

#### ANOVA<sup>a</sup>

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	642,475	2	321,237	31,446	.000 <sup>b</sup>
Residual	633,371	62	10,216		
Total	1275,846	64			

Dependent Variable: Y

Predictors: (Constant), X2, X1

Source: Output of SPSS version 22

Based on table 13 the f test so that it can explain the effect of the variables simultaneously as follows:

- Based on the value of f table at a significant level of 5% with the db of 2 and db of 63 is 3.143.
- Based on the calculated f value is greater than the F table value ( $31.446 > 3.143$ ), meaning that  $H_0$  is rejected and  $H_a$  is accepted, it means that the variables of work safety (X1) and occupational health (X2) together have a significant effect on the performance variable (Y).

### Discussion result

The results of research on occupational safety and health on employee performance at PT. Wijaya Karya (Persero) Tbk. as follows:

- Work safety affects employee performance by 47.3% and the rest is influenced by other factors. After testing the hypothesis partially (t test) it shows the amount of t count  $5,117 > t_{table} 1,669$  which means that there is an influence between safety work on employee performance at PT. Wijaya Karya (Persero) Tbk.
- Occupational health affects employee performance by 29.4% and the rest is influenced by other factors. After partially testing the hypothesis (t test), it shows the amount of t count  $1.952 > t_{table} 1.699$ , which means that there is an influence between occupational health on employee performance at PT. Wijaya Karya (Persero) Tbk.
- Meanwhile, when viewed together, occupational safety and health influence employee performance by 50.4%, and the rest is influenced by other factors. After doing the hypothesis simultaneously (f test), it shows the amount of t count  $31.446 > 3.143$ , which means that there is an influence between occupational safety and health on the performance of employees at PT. Wijaya Karya (Persero) Tbk.

### CONCLUSION

Based on the resulting research that has been done as well as in the discussion then the author can draw several conclusions, namely:

- a. The effect of work safety (X1) on employee performance (Y) is partially positive, this is stated based on the results of the t test with a t-count value of 5.117 while the t-table value is 1.669. The results of this study indicate that  $t_{count} > t_{table}$  then  $H_0$  is rejected and  $H_a$  is accepted, it can be concluded that work safety (X1) partially has a positive and significant effect on performance (Y).
- b. The effect of occupational health (X2) on employee performance (Y) is partially positive, this is stated based on the results of the t test with the t value of 1.952 while the t table value of 1.669. The results of this study indicate that  $t_{count} > t_{table}$  then  $H_0$  is rejected and  $H_a$  is accepted, it can be concluded that occupational health (X2) partially has a positive and significant effect on performance (Y).
- c. The effect of occupational safety (X1) and occupational health (X2) together (simultaneously) has a positive and significant effect on employee performance (Y), this is shown by using the calculated f test value of 31.446 > f table of 31.143 so that  $H_0$  is rejected and  $H_a$  accepted means that work safety (X1) and occupational health (X2) simultaneously have a positive and significant effect on employee performance (Y) and based on the determination coefficient test, the amount of  $R^2$  is 0.504 which means that the effect of work safety (X1) and occupational health (X2) on performance employee (Y) 0.504 means that the effect of work safety (X1) and occupational health (X2) on employee performance (Y) is 50.4% while the remaining 49.6% is explained by other variables not examined in this study.

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