

# The Influence of Reliatation Safety and Healthy Work to Work Productivity Employees at PT PLN (Persero) Jawa Barat and Banten

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**Abstract:** *Realitation safety and health work effort observation to people. machine, mineral, and method including environment work not experience of the accident. While work productivity employees attitude of mind having the spirit to the make-up of repair by employees.. The regearch aim to acknowledge/analyzed : (1) situasional leadership style at PT Multi Unggul Sinergi (2) job statisfaction at PT Multi Unggul Sinergi (3) the infivences situasional leadership style to job statisfaction at PT Multi Unggul Sinergi. The research formed/developet by using and survey method. This research also using descriptive verifikatif methods. Population 328 employee and 80 personel/employee are treated as a sample of this reseach which using a stratified random sampling. Questioners, observation and interview are conducted in collecting data. EXCEL and SPSS for windows had been performed processing data. The result of this reseach represent/shown that there are 18,58 %. Job statis faction influed by a situasional leadership style and 81,42 % influenced by another factors which not analyzed. Hypothesis test conduded ho has been rejected and we accepted H1 I'ts mean that realitation safety and healt work had a significant influenced toemployees work productivity.*

**Keywords:** realization safety and healty work, influenced to employees work productivity, and employees.

## 1 Background

PLN is corporate have to handle energy source management that needed by society, so PLN is pointed as firm of electric provider. Demand of electricity is very high because it is widely used by various industrial sectors including big industry, medium industry and small industry.

PLN as electric utilities have the task to be done is to create workplaces safe, comfortable and safe, so avoid or free of accidents, occupational diseases, explosions, fires and environmental pollution caused by the potential hazards that can cause economic losses and non economic good for employees, companies, governments and society.

Safety and health work is a form effort for workers to obtain coverage for Safety and Health work (K3) in performing work which could threaten his job from his own individual and work environment. surveillance of people, machinery, minerals, and methods that include the work environment so that workers are not injured.

Implementation of basic health and safety based on UUD 1945 (Section 27:2 ) which states that every citizen has the right to decent employment and income for humanity. Mean the above understanding that safety and welfare of the working should be ensured. Death, disability, injury, disease and other similar as a result of an

accident, contrary to the basic humanity.

Accidents are caused by two factors which is the human and the environment. The human factor is the lack of physical ability, physical fitness and mental and spiritual. Unsafe acts of humans such as deliberately violating safety rules in the compulsory labor, less skilled workers themselves. While environmental factors are not safe from the state regarding the working environment such as equipment or machine, but the frequency of occupational injuries are more prevalent due to human factors, because the man most instrumental in using the equipment in the corporate. These factors if not prevented / controlled can result in accidents, diseases and health problems, therefore these factors must be controlled.

Basic in the implementation of safety and healthy work for employees in PT PLN (Persero) Distribution West Java and Banten APJ Bandung is:

- 1 Law No. 1 Year 1970 about Safety
- 2 Law No. 14 of 1969 section 9 points out that: "Every worker is entitled to protection or safety, health, morals, the maintenance of morale and behavior in accordance with human dignity and moral religion".
- 3 General Installation of Electrical Equipment in 1977 (PUU. 1977) on Occupational Safety Services in Operation disorder.

- 4 Letter of Directors PLN No. EI054/DIR/76 about the prevention of accidents.
- 5 Announcement letter No.033/PST/76 about safety tools & Rescue Work.
- 6 Announcement letter directors No.005 // 1982, date of 23th November 1982 about liabilities use the tool wear work and the belt.
- 7 Instruction Directors PLN No.002/84 about Cultivating Safety and Environmental Health in PLN.

Base on survey that writer does pass through interview to the employees of PT PLN where employees are required to work well, but often forgotten its safety and health management systems for example most of the employees working in the field are often seen without the use of personal protective equipment is required and should be used when work safety standards themselves as helmets, gloves, work clothes and belts. Where there are still many cases of accidents that occurred in the company.

Indicators of the accident that the work environment is a place where a person or employee in a work activity [1]. Work environment in this case concerning working conditions, such as ventilation, temperature, lighting and the situation. Working tools and materials is an essential thing needed by companies to produce goods. In producing working tools is vital that used by workers in the conduct of the production process and in addition it is the primary materials that will be the goods. Each part of the production have ways to do different jobs held by employees. In ways that are normally performed by employees in performing all work activities, such as using equipment already available and appropriate personal protective equipment use and abide by the rules and understand how to operate the machine.

The phenomena that exist in PT PLN (Persero) Bandung, from some of the indicators is the use of protective equipment is less awareness of the employees in terms of using tools that are required to work and still less knowledge of employees in the use of work tools that required training and dissemination to the employees in using the tools that work properly and effectively. So it is clear that the result of occupational safety and healthy work (K3), which often lack forgotten and respect all safety instructions as well as some employees who still have no use or wear personal protective equipment is required so get to disadvantage firm that caused the decline of labor productivity, comfort, and safety in the work.

PT PLN is currently in demand to improve the quality of service to the public users of PLN's power, so that employee performance must be optimized and improved productivity of employees at this time is considered.

PT PLN employee productivity can be realized through attitude of mind that have a passion for improvement by increasing either the employee-related improvements such as improved self-knowledge, skills, discipline, personal effort, and work-related improvements such as improved

management and good working methods, cost savings, timeliness, and good technology system.

However, based on interviews with the Head of Human Resources Subdivision that there is still a lack of improvement is still a lack of work as set a good job, a job well done and on time, and respect or compliance with regulations, rules, ethics, norms and rules applies in particular about safety.

Not optimal work productivity of employees in PT PLN (Persero) Bandung factors can be derived from the implementation safety and health work of the company or from other factors, thereby reducing employee productivity at the company. Base background description upon, therefore writer perceives is of important to do research about "Analysis implementation safety and healthy work (K3) to work productivity employee PT PLN (PERSERO) Jawa Barat and Banten".

## 8 Hypothesis

Hypothesis can be regarded as temporary estimates of the relationship of variables to be tested in fact. Because of its allegations, the hypothesis should contain clear implications for testing the stated relations. Therefore, the hypothesis of this study can be formulated as follows: "Analysis implementation safety and healthy work to work productivity employee PT PLN (persero) Bandung".

## 9 Aim

The purpose of this study was to:

- a) Knowing the Implementation of Safety and Healthy Work (K3) in PT PLN (Persero) Bandung.
- b) Knowing the productivity of employees in PT PLN (Persero) Bandung.
- c) Examine and analyze the influence of the implementation safety and healthy work on the productivity of employees in PT PLN (Persero) Bandung.

## 10 Design

The study design is a design or model in the form of research to get an objective truth in the collection of necessary data. In conducting the research, the need for research designs. In a more narrow design of this study, the authors apply a broader research design that includes the processes as follows:

### Identification of Problems

The study began with a problem. The next problem to be solved by researchers through research. Then the researchers set the title of the study, so that can know what will be studied. In this study the authors take the title "Analysis Implementation safety and Healthy work (K3) to work productivity of employees in PT PLN (persero) Bandung." in which the Safety and Healthy work

(independent variables) as independent variables and productivity (dependent variable) as the dependent variable. The identification problems in this study are:

- a) Implementation safety and health work that been ignored and forgotten by the employee.
- b) Employees who do not comply with safety rules not use protection equipment such as helmets, gloves, belts, protective clothing, and so forth.
- c) Employee productivity is not optimal as a result of carelessness the implementation safety and health work.
- d) Formulating research problems, including making the specification of objectives, broad range (scope), and hypotheses to be tested. Problems examined in this study are the Safety and Healthy work (independent variables) as independent variables and employee productivity (dependent variable) as the dependent variable. The formulation of the problem in this study are:
  - e) How the implementation safety and healthy work (K3) in PT PLN (Persero) Bandung?
  - f) How does the productivity of employees in PT PLN (Persero) Bandung?
  - g) How big is the influence safety and healthy work (K3) on the productivity of employees in PT PLN (Persero) Bandung?

Choose and give the definition of each measurement variable. Measurement variables used in this study is the measurement with ordinal scale because of the level of measured data. On this scale, the sequence of symbols or codes of numbers that have significance level sequence starting from most positive to most negative and vice versa.

#### Selecting procedures and techniques used.

- a) The technique used to prove the hypothesis in this research by using descriptive analysis with quantitative approach that involves testing the validity and reliability testing.
- b) Develop tools and techniques of data collection by using the enclosed questionnaire.
- c) The questionnaire used in support of this research, the questionnaire productivity of employee and safety and healthy work.
- d) Reporting the results of the research including the research process and interpretation of data.

## 11 Framework

- a) A company's activities in achieving its objectives, the main source of employees in running the company's capital, production, equipment can not be used effectively and efficiently if it is not run by the people (employees).
- b) An employee can not work optimally, if the safety and health work is not guaranteed, therefore the employees and the company needs to pay attention to

physical and mental condition by exercising their safety and health program.

- c) Safety is concerned with the safety of machines, appliances, instruments of labor, materials and processing, foundation work and environment and ways of doing the job.

According Anoraga (2005) in Budiono et al (2008:99) suggested indicators Safety and Healthy work (K3) include:

#### Work environment

Work environment is a place where a person or employee in a work activity. Work environment in this case concerning working conditions, such as ventilation, temperature, lighting and the situation.

#### Working tools and materials

Working tools and materials is an essential thing needed by companies to produce goods. In producing working tools is vital that used by workers in the conduct of the production process and in addition it is the primary materials that will be the goods.

#### How to do the job

Each part of the production has ways to do different jobs held by employees. In ways that are normally performed by employees in performing all work activities, such as using equipment already available and appropriate personal protective equipment use and abide by the rules and understand how to operate the machine.

Based on the above, we can conclude that safety and healthy work not only aims to achieve the level of safety and health is high, or just to prevent possible accidents or occupational diseases. Furthermore safety and healthy work has the vision and mission, far ahead of realizing a healthy workforce, safe, productive and prosperous, and also create a protection to the company.

According Sedarmayanti [7] states: "Productivity is the mental attitude (attitude of mind) who has a passion to make improvements to repair."

Many factors can influence the increase are:

#### A. Related to self-improvement:

##### 1. Knowledge

The level of knowledge must always be developed through both formal and informal education. Because each use of the technology will only be able to do well with the knowledge, skills and abilities that are reliable.

##### 2. Skills

Skills factor both technical and managerial skills will determine the achievement level of productivity.

##### 3. Discipline

Discipline is the mental attitude is reflected in the actions

of individual behavior, group or community in the form of compliance with regulations, rules, ethics, norms and rules which apply.

#### 4. Private Efforts

Level of personal effort in the work as far as where we do a job and continue to strive to achieve the best results in every job we do.

#### B. The increase in employment-related:

1. Management and a better method of work: The degree to which employees can set a good job and good working methods.
2. Cost Savings: The degree to which the work to efficiency costs.
3. Timeliness: The degree to which employees in a job well done and on time
4. Systems and better technology: The degree to which the use and mastery of technology skills.

Implementation of the program safety and health (K3) can provide security and comfort at work also provides protection to employees to be free of accidents and unhealthy environment that can harm employees and companies.

According to Ike Kusdyah Rachmawati [4] observes: "Safety and health for prevention and eradication of disease and accidents caused by work, maintenance, and improvement of health, labor and nutrition, care and enhance efficiency and productivity of human labor, the eradication of work exhaustion, excitement and enjoyment multiplier work."

Recognizing the above, the company should be able to understand the needs of their employees so that productivity of labor in producing the product set can be improved. Since one of the factors that affect labor productivity is the degree of fulfillment of the need for security, safety and that the company provides health care to its employees. With the guarantee of safety and health, employees are expected to increase work productivity, so that their needs for security, safe, and healthy can be met.

## 12 Sources of data

### Primary data

Primary data is data taken directly from the data in the company. Data obtained through direct observation in the company who becomes the object of research and conduct interviews with the management company that is part of Personnel Administration, and the distribution of questionnaires.

### Secondary data

Secondary data is data necessary to support the primary data. Data was taken from books, journals, documentation

and other studies.

## 13 Method determination Data

### Population

The population of this study was employees at PT. PLN (persero) Bandung numbered 328 people.

### Samples

Sampling techniques in the study conducted by stratified random sampling technique based on the withdrawal of the location of the unit employees and the number of respondents of each strata.

According to Vincent Gasperz in Sugiyono [9] says that the stratified random samplings are as follows:

"stratified random sampling is a sampling method by first classifying the population into strata based on certain criteria and then selecting a simple random every stratum".

Formulation:

$$n = \frac{N}{1 + Ne^2}$$

wherein :  $n$  = sample size  
 $N$  = population size

$e$  = the error rate in the research

$$n = \frac{328}{1 + 328(0,1)^2} = 76,64 = 80$$

Researchers determine the error rate by 10% so the number of sample taken by 80 employees.

## 14 Results analysis and interpretation

### Safety and Healthy work PT PLN (persero) Bandung

The responses to the instruments of safety and health research at PT PLN (Persero) Bandung; it can be seen through the respondents' answers to questions from the questionnaire that includes indicators of health and safety.

In this study the safety and health variables explored through three indicators, namely the work environment, work tools and materials, and how to do the job. Hence weighting or scoring the answers strongly agree, agree, simply, do not agree, and strongly disagree. The score indicates the level of safety and health of PT PLN (Persero) Bandung.

**Table 1:** Result variable data processing of occupational safety and health

Indicator	Score Actual	Score Ideal	Present age	Criteria
Work environment	1087	1600	67,93%	Enough
Equipment and materials work	970	1200	80,83%	Good
How do the job	803	1200	66,91%	Enough
Total	2860	4000	71,5%	Good

Based on the scoring in the table above shows that the percentage of occupational safety and health that exist in PT PLN (Persero) Bandung amounted to 71.5%, where the figure is good over a range of criteria.

**Work productivity employees in PT PLN (persero) Bandung**

To further clarify how the work productivity of employees in PT PLN (Persero) Bandung, the authors conducted a study and distribute questionnaires to the employees of PT PLN (Persero) deals with a number of employees as many as 328 people, while the sample or the respondent as many as 80 people.

Questionnaire for labor productivity variables consisted of 10 questions with ordinal measurement scale that has five alternative answers. Scores obtained from each respondent can be seen more on the sheet attached. In this study explored through two indicators, namely related to self improvement and increase in work-related. Hence weighting or scoring the answers strongly agree, agree, simply, do not agree, and strongly disagree. The score shows the strength of labor productivity in PT PLN (Persero) Bandung.

**Table 2:** Result variable data processing of employee productivity

Indicator	Score Actual	Score Ideal	Present age	Criteria
Increased self-related	1506	2000	75,3%	Good
Increased work-related	1487	2000	74,35%	Good
Total	2993	4000	74,82%	Good

Based on the scoring in the table above shows that percentage productivity of existing employees at PT PLN (Persero) Bandung amounted to 74.82%, where the figure is good over a range of criteria.

**Analysis Safety and healthy work to Work Productivity Employee PT PLN (persero) Bandung**

In analyzing the extent to which safety and health work influence on the productivity of employees in PT PLN (Persero) Bandung, the authors conducted a test of data quality (validity and reliability), followed by using the Spearman Rank correlation, coefficient of determination (Kd) and significant.

**Rank Spearman Correlation Analysis**

Correlation calculations using Spearman Rank correlation was used to analyze the data in the form of ordinal, to find the magnitude of correlation between independent variables (occupational safety and health) with the dependent variable (employee productivity) formula can be used non-parametric correlation analysis, the correlation of rank spearman. It can be obtained by using the formula;

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d_i^2}{2\sqrt{\sum x^2 \cdot \sum y^2}}$$

Caption:

- $r_s$  = rank spearman correlation coefficient
- $\sum x^2$  = number of the same rank on the variable X
- $\sum y^2$  = number of the same rank on the variable Y
- $\sum d_i^2$  = amount calculated between the grades contained in the variable X and variable Y by the above calculation.

The result of the statistical data processing by using the non-parametric rank spearman formula can be seen in the output of SPSS the following:

**Table 3:** Result the rank spearman corellation test

			Safety and Healthy Work	Productivity Employee
Spearman's rho	Safety and Healthy Work	Correlation Coefficient	1,000	,431(**)
		Sig. (2-tailed)	.	,000
		N	80	80
	Productivity Employee	Correlation Coefficient	,431(**)	1,000
		Sig. (2-tailed)	,000	.
		N	80	80

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

Output figures on the Spearman Rank correlation between safety and healthy and employee productivity yield 0.431 points. The figure shows the relationship between the two variables are sufficient, while a positive sign (+) indicates that the larger the changes in the safety and health of the greater employee productivity, or vice versa, the smaller the changes in safety and health work the lower the productivity of labor employees at PT PLN (Persero) Bandung. The correlation between health and safety and employee productivity is significant for the test with an error rate of 10%, or 90% confidence level.

**Coefficient of Determination**

To find out how much health and safety (variable X) affect employee productivity (variable Y), then performed the analysis of determination coefficient (Kd).

$$Kd = r^2 \times 100 \%$$

Wherein:

- Kd = Determination coeffisien
- r = Correlation coeffisien
- then :  $Kd = r^2 \times 100\%$
- $Kd = (0.431)^2 \times 100\%$
- $Kd = 18,58 \%$

Based on the calculation of determination coefficient (Kd) of 18.58%. This figure means the magnitude of the influence of safety and health work of the labor productivity of 18.58%. While the rest, which is 81.42% influenced by other factors, namely compensation, conflicts with coworkers or family, discipline, facilities, and others.

**15 Tests of Hypothesis**

Hypothesis testing is used to determine whether the research conducted will reject or accept the hypothesis. While the hypotheses used by the writer are the hypothesis zero (Ho) and the hypothesis one (H1).

Ho testing criteria is if the price of the above formula (count t) is obtained from t distribution table with  $\alpha = 0.05$  (5%) to know accepted or rejected, expressed through the criteria according to which advanced by Umar Hussain (2000: 316 - 317) :

If the table  $t > t$  count

Ho then there is the reception area, mean H1 accepted or safety and health work has no effect on employee productivity.

If the table  $t < t$  count

Ho then there is the rejection region, mean H1 accepted or health and safety work affects employee productivity.

Below is the calculation of the significance test:

$$t_{hit} = t = r \frac{\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$t_{hit} = 0.431 \sqrt{(80-2)}$$

$$t_{hit} = \frac{0.431 \sqrt{78}}{\sqrt{1-0.431^2}}$$

$$t_{hit} = 4,22$$

Description hipotesis testing as follow:

- $R_s = 0.431$
- $\alpha = 0.05$
- $n = 80$
- $(dk) = n-2$
- $= 80 - 2 = 78$

Since  $dk = 78$  lies between 60 – 120 seen from the table, then the table to get the value of t should be interpolated by the following formula:

$$T_{78} = t_{60} - \frac{dk - 60}{120 - 60} (t_{60} - t_{120})$$

$$T_{78} = 2,000 - \frac{78 - 60}{120 - 60} (2,000 - 1,980)$$

$$T_{78} = 2,000 - 0,3 (0,02)$$

$$T_{78} = 2,000 - 0,006$$

$$T_{78} = 1,994$$

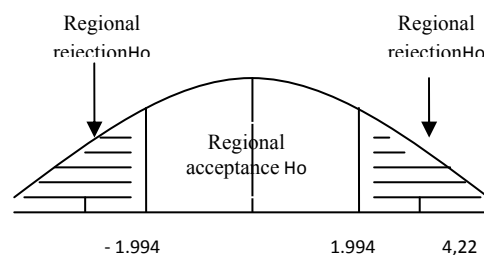
$$t \text{ count} > t \text{ table} = 4,22 > 1,994$$

Criteria:

- When  $t \text{ count} < t \text{ table}$ , then Ho is accepted
- When  $t \text{ count} > t \text{ table}$ , then Ho is rejected

T count (4.22) > t table (1994), the Ho is rejected H1 accepted.

Below is a picture of Ho rejection region and acceptance region H1:



**Figure 1:** Curve Hypothesis regional acceptance and rejection

At  $dk = 78$  t value table ( $\alpha = 0.05$ ) of the interpolation = 1994, while the t count value = 4.22. The t count > t table is the value of  $4.22 > 1.994$ , it can be concluded that "there is significant influence between safety and health in employee productivity in PT PLN (Persero) Bandung".

## 16 Potential Impact

The influence of safety and health work on the productivity of employees in an effort to increase employee productivity, the company should give more attention on the implementation policy of safety and health standards in accordance with the policy defined so as to improve employee productivity. Employees should also be priority importance of the implementation of safety and health work so that no work accidents that may hinder the work process so that the vision and mission of the employees and the company can be reached.

## 17 Managerial Impact

For the company to recommend the company to require the use of protective equipment and socialize and work tools, such as improving the road and apply the Safety and Health work (K3) with good and proper. Safety and Health work Program (K3) for employees, such as a notice of how to use the equipment, the use of personal protective equipment, how to operate the machine properly and correctly. In addition the company must improve safety and health work program (K3) and explain the principles of Safety and Health work (K3) in the operational activities.

Companies are advised to pay more attention to employee job control system; the company must also prefer the work rules for employees in carrying out the work, in order to avoid unwanted accidents in the work so as to improve morale and productivity of employees at PT. PLN (Persero) Bandung.

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