

Article

The Influence of Occupational Safety and Health and the Work Environment on Employee Performance at PT. PLN PDKB KSKT Unit

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Abstract: Things that is done by the company can be in the form of occupational safety and health training aimed at improving knowledge , skills , attitudes that are physically designed according to the work needs of each employees . In addition , protective equipment is also called Personal Protective Equipment (PPE) which is equipment used by all employees without exception to protect themselves from potential workplace accidents . There are several elements that can support occupational safety , namely elements of occupational safety and security such as awareness in maintaining occupational safety and health , being thorough , implementing work procedures by pay attention to occupational safety and health . Good occupational safety is an important dimensions of employee protection . This protection aiming for employees to safely carry out their daily work so that they can improve industrial productivity performance . PT. PLN (Persero) Unit PDKB KSKT is a State- Owned Enterprise (BUMN) whose purpose is in the field of distributing electrical energy PT. PLN (Persero) serves the electricity needs of the community such as submitting applications for electricity installations , submission applications for increasing voltage or adding power , checking PLN electricity bills , paying electricity to complan.

Keywords: Employee Performance, Influence of K3, Work Environment.

1. Introduction

Human resources are truly important for a company or organization, this is because humans are the driving force in running a company so that the company can develop and survive in the long term. Therefore, employees must receive serious attention and must be managed as well as possible so that the company can increase the productivity of its human resources. According to Marwansyah (2014:37) explains that human resource management is an empowerment of human resources in an organization by carrying out planning, human resource functions, recruitment, human resource development, career development , compensation and welfare, occupational safety and health and industrial relations .

According to Rusdayanti (2017:1) said that human resource management in a company or organization is carried out with the aim that the company can also increase the level of efficiency and effectiveness of employees in working. It can be concluded that human resources in a company are an important component that must be managed well from the beginning of planning, the functions of human resources themselves in the company, recruitment until human resources carry out their responsibilities in the company to career development , welfare in relation to the work environment and no less important is occupational safety and health so that the company can increase the effectiveness and efficiency of employee performance. Therefore, companies need to create a safe work environment in order to minimize probability of work accidents.

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Basically, the work environment is the environment where the work or activities in producing goods and services take place. According to Orixpete and Ewin (2024:93) explains that the work environment is everything around the employee that can influence the employee in carrying out the tasks they do. For example, with adequate lighting, equipment to support their work and so on. Based on Aruan and Fakhri (2015) defines the work environment as a condition or state around the workplace physically and non-physically where these things can give a pleasant impression, secure, calm employees so that they affect employee performance in carrying out their duties.

It can be concluded that a safe working environment will have a positive impact on employees. This is supported by Narianggoro's opinion. et al , (2014) explained that a safe work environment will certainly increase productivity due to a decrease in the number of lost days and increase the efficiency and quality of committed employees, in addition to reducing health and insurance costs, lower levels of worker compensation and direct payments due to decreased claim submissions, better workforce selection ratios due to the increasing company image, increased sense of ownership and employee participation, making it easier for employees to be more flexible and adaptable. From these points, it means that it is very important for companies to pay attention to the work environment they have created in order to provide security and comfort for their employees. Employee safety at work can be achieved through occupational safety and health (K3).

According to Irzal (2016:13) defines occupational safety as an effort from the company in creating a safe work environment and preventing possible accidents . According to Mangkunegara (2016:159) explains that occupational safety refers to conditions where employees are safe or saved from suffering, damage or loss in the work environment. While occupational health refers to conditions which mean employees are free from physical, mental, emotional disorders caused by the work environment. Occupational safety can also be interpreted as a condition where employees are protected from danger while doing work.

From the explanation above, it can be interpreted that PT. PLN (Persero) PDKB KSKT Unit has a dangerous work risk that can be caused by electricity because the work activities carried out are related to electricity which is very dangerous. As for the news related to the work accident that occurred at the PDKB unit at PLN UP3 Lubuk Pakam . Based on the news page from Medan Mistar.id August 12, 2023, it was stated that IHZ died instantly while carrying out network maintenance with his team in the PDKB section of the ULP Tanjung Morawa work area on July 21. At that time he was on duty with another employee with the initials MAM (36). "In the incident, MAM reportedly survived, but he had to be rushed to the hospital because he was electrocuted with the victim. MAM is reportedly undergoing intensive care at the Columbia Asia Hospital because his hands suffered serious burns." From the news, it can be concluded that it is very important for the PDKB unit to implement the K3 system according to SOP and IK (Work Instructions) because from the case many were harmed, namely victims who had to lose their lives, then also one victim who had to be declared disabled, with the incident above, PLN which oversees PDKB, namely ODS (Kalimantan and Sumatra Distribution Operations) conducted an evaluation which ultimately affected the PDKB unit in the South Kalimantan and Central Kalimantan regions. ODS finally had to ground / stop work until PT. PLN (Persero) PDKB Unit KSKT employees met the requirements of ODS (Kalimantan and Sumatra Distribution Operations) and the decline in semester assessment targets which ultimately affected employee performance, for the company it also affected kwh, rupiah, SAIDI and SAIFI (parameters used to measure the reliability of the electricity distribution system at PT PLN (Persero) and work points.

2. Theoretical Review

Occupational safety according to Megginson (2017:161) states that the term Safety encompasses both the terms safety risk and health risk. Work safety refers to conditions that are safe or free from suffering, damage or loss in the workplace . Safety risks are aspects of the work environment that can cause fire, fear of electric current , cuts, bruises, sprains, broken bones, loss of aids, vision, and hearing. All of these are often associated with company equipment or physical environment and include work tasks that require maintenance and training. Wirawan (2015:543) defines work safety as a condition where workers are safe, do not experience accidents in carrying out their duties and work. Thus, the implementation of work takes place normally without being disturbed by work accidents, workers can create planned performance. In order for this to be created, companies or organizations need to implement work safety management which is an integral part of company management.

From several opinions, it can be concluded that occupational safety refers to the safety of all employees from all work accidents in the work environment such as falls, fires, electric shocks, cuts, bruises, sprains, broken bones, etc., which cause serious physical damage. According to Ramlan (2018:34) there are several objectives of occupational safety, namely, maintaining and improving the health of workers in all fields of work to the highest level, both physically, mentally, and in terms of welfare. social, preventing the emergence of health problems of workers caused by the conditions of their work environment such as work-related accidents, providing protection to workers when carrying out work that is likely to be dangerous due to factors that endanger health in the workplace, placing work in a work environment based on skills, physical and psychological abilities of the work, protecting the safety of workers in carrying out their work for the welfare of life and increasing national productivity, ensuring the safety of everyone else in the workplace, sources of production are maintained and used safely and efficiently, creating a safe work system starting from input, system to output, avoiding losses both moral and material due to work accidents, and controlling the possibilities that exist in the workplace. There are several causes of disrupted work safety according to Misrawati (2019:14), until now it is more due to unsafe behavior with factors such as, reckless or careless, not obeying regulations, not following standard work procedures, not wearing personal protective equipment, and weak physical conditions.

Almost every type of work carries risks, including the risk of occupational health disorders. The physical, mental, and social conditions of workers are influenced by the work itself, work equipment, materials, processes, and work environment. The fact that occupational health is related to work is now increasingly apparent. Misrawati (2019:25) states that there are functions of Occupational Safety, namely, (1) Anticipating, identifying, and evacuating conditions and practices that can endanger the safety of workers. (2) Creating hazard control designs, methods, procedures, and programs. (3) Implementing, documenting, and informing other colleagues regarding hazard control and hazard control programs. (4) Measuring and re-examining the effectiveness of hazard control and hazard control programs.

According to Megginson (2017:161) stated that the term occupational health refers to a condition that is free from physical, mental, emotional or pain disorders caused by the work environment. Health risks are factors in the work environment that work beyond a specified time period, an environment that can cause emotional stress or physical disorders. Mathis & Jackson (2017:98) define occupational health as a variety of employee health problems that are sometimes invisible. This disease can range from mild illnesses such as flu to serious illnesses related to work. From several opinions, it can be concluded that occupational health refers to mild physical disorders such as fever, flu, and psychological disorders such as stress and emotions.

According to Bjornstad et al., (2024:43) work environment is defined as a condition related to the characteristics of the workplace towards employee behavior and attitudes where it is related to the occurrence of psychological changes due to things experienced in their work or in certain circumstances that must continue to be considered by the organization which includes work boredom, monotonous work and fatigue. Isyandi (2014:12) defines the work environment as something that exists in the environment of workers that can influence them in carrying out their duties such as temperature, humidity, ventilation, lighting, noise, cleanliness of the workplace and the adequacy of work equipment. From several opinions, it can be concluded that the work environment is a place where employees or employees carry out their work activities where there are things that can affect them in carrying out their duties, the work environment can affect the psychological condition of employees and can affect the sense of security and comfort of employees in carrying out their duties, this is like work equipment, temperature, lighting, humidity, cleanliness and others.

3. Research Methods

This type of research is Associative research where associative research is aimed at finding out the relationship between two or more variables (Sugiono, 2019: 7). The type of research used by the author in this study is by using quantitative methods. Quantitative methods are research methods that use numbers as research data which will later be analyzed statistically with the aim of being able to find out and test the research hypothesis that will be carried out or has been determined (Jannah, 2018: 34).

Population is the whole or subject or individual who has certain characteristics, clear, and complete according to what will be studied (Mahmud, 2011:18). The population in the study used was 57. This study took as a population the subjects who have the following

characteristics: working at PT. PLN (Persero) Unit PDKB KSKT. The sampling technique in this study is the Non Probability sampling technique chosen, namely by saturated sampling. A method of withdrawal where if all members of the population are sampled. Because the number of population members in this study was less than 100 people, all members were used as research samples, namely 57 people.

4. Results and Discussion

Multiple Linear Regression Test Results

Multiple linear regression analysis is used to determine the magnitude of the independent variables, namely the influence of occupational safety , occupational health, and work environment on the dependent variable of employee performance. Data processing with the SPSS 20 for Windows software program provides the following results:

Table 1. Regression Coefficient Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig .	Collinearity Statistics	
		B	Std . Error	Beta			Tolerance	VIF
1	(Constant)	4,084	2,677		1,526	.133		
	OCCUPATIONAL SAFETY_X1	.457	.125	.402	3,670	.001	.757	1,321
	OCCUPATIONAL HEALTH_X2	.235	.114	.196	2,050	.045	.996	1,004
	WORK ENVIRONMENT_X3	.326	.092	.386	3,531	.001	.758	1,319

a. Dependent Variable : PERFORMANCE

Source: SPSS V20 (2025) for windows

Based on table 1, it can be seen that the linear regression equation that reflects the relationship between the variables in this study is as follows:

$$Y1 = 0.402 X1 + 0.196 X2 + 0.386 X3$$

From the multiple linear regression equation above shows that:

- a. The value of the Occupational Safety regression coefficient (X1) of 0.402 is positive, which means that the better the occupational safety provided, the more employee performance will increase.
- b. The value of the Occupational Health regression coefficient (X2) of 0.196 is positive, which means that the better the occupational health provided , the more employee performance will increase.
- c. The work environment coefficient value (X3) of 0.386 is positive, which means that the better the work environment created, the more employee performance will increase.

Partial Hypothesis Testing (T-Test)

For t in this study is used to determine the ability of each independent variable in influencing the dependent variable. Another reason the t test is conducted is to test whether the independent variables individually have a significant influence or not on the related variables.

Table 2. Result of t-Test (Partial Test)

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig .
		B	Std . Error	Beta		
1	(Constant)	4,084	2,677		1,526	.133
	OCCUPATIONAL SAFETY_X1	.457	.125	.402	3,670	.001
	OCCUPATIONAL HEALTH_X2	.235	.114	.196	2,050	.045
	WORK ENVIRONMENT_X3	.326	.092	.386	3,531	.001

a. Dependent Variable : PERFORMANCE

Source: SPSS V20 (2025) for windows

As can be seen in table 2, it can be concluded that:

a. Hypothesis Testing 1

Hypothesis test of Occupational safety (X1) on employee performance (Y). Based on the results of the calculations that have been carried out, the t-value of 3.670 is obtained with a positive value with a significant result of $0.001 < 0.05$. This shows that occupational safety has a positive effect on employee performance. This means that if the occupational safety program at PT. PLN (PERSERO) Unit PDKB KSKT is carried out properly and provides a sense of security for employees, employee performance will increase.

b. Hypothesis Testing 2

Hypothesis test of Occupational health (X2) on employee performance (Y). Based on the results of the calculations that have been carried out, the t-value of 2.050 is obtained with a positive value with a significant result of $0.045 < 0.05$. This shows that occupational health has a positive effect on employee performance. This means that if the employee occupational health program by PT. PLN (PERSERO) Unit PDKB KSKT is properly considered, employee performance will increase.

c. Hypothesis Testing 3

Hypothesis test of Work environment (X3) on employee performance (Y). Based on the calculation results that have been done, the t-value of 3.531 is obtained with a positive value with a significant result of $0.001 < 0.05$. This shows that the work environment has a positive effect on employee performance. This means that if the work environment at PT. PLN (PERSERO) Unit PDKB KSKT supports, employee performance will increase.

Simultaneous Hypothesis Testing (F Test)

The F test or also called the simultaneous significant test is intended to see the overall ability of the independent variables, namely training and work ethics, to be able to or explain the behavior or diversity of the dependent variable, namely employee performance. The F test is also intended to determine whether all variables have a regression coefficient equal to zero. Based on the results of data processing with the SPSS version 20 program, the following results are obtained:

Table 3. F Test Results (Simultaneous Test)

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig .
1	Regression	139,764	3	242,305	17,788	.000 ^b
	Residual	149,285	57	4,990		
	Total	289,049	60			
a. Dependent Variable : PERFORMANCE						
b. Predictors : (Constant), WORK ENVIRONMENT_X3, OCCUPATIONAL HEALTH_X2, OCCUPATIONAL SAFETY_X1						

Source: SPSS V20 (2025) for windows

Table 3. shows that the results of the model feasibility test obtained an F-count value of 17,788 with a significance level of 0.000 (< 0.05). This result means that the model used is feasible or appropriate.

Coefficient of Determination (R2)

This determination coefficient functions to determine the percentage of the influence of the independent variable and the dependent variable, namely by squaring the coefficient found. In its use, this determination coefficient is expressed in percentage (%). To find out the extent of the contribution or can be known through the determination coefficient by looking at the R- Square value in the table below .

Table 4. Determination Coefficient Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std . Error of the Estimate
1	.695 ^a	.484	.456	1.61834
a. Predictors : (Constant), WORK ENVIRONMENT_X3, OCCUPATIONAL HEALTH_X2, OCCUPATIONAL SAFETY_X1				

From table 4. it can be seen that the R value is 0.695 or 69.5% which means that the close relationship between employee performance and its independent variables, namely occupational safety, occupational health, and work environment. The R-square value in this study is 0.456 which means that 45.6% of the variation in employee performance is explained by the independent variables, namely occupational safety, occupational health, and work environment. While the remaining 54.4% is explained by other variables not examined in this study.

Then the standard error of the estimated means measuring the variable from the predicted value . standard error of the estimated also called standard deviation . Standard error of the estimated in this study is 1.61834 where the smaller the standard deviation means the model is better at predicting employee performance.

The Influence of Occupational Safety on Employee Performance

Based on the results of the hypothesis in this study, the answer to the formulation of the research problem has been obtained. The results show that work safety on employee performance at PT. PLN (Persero) Unit PDKB KSKT obtained a t count of 3.670 with a positive value with a significant result of $0.000 < 0.05$, which means that H_0 is rejected and H_a is accepted.

It can also be interpreted that partially there is a significant positive influence between work safety on employee performance at PT. PLN (Persero) Unit PDKB KSKT. The work safety program has been proven to affect employee performance. This is because work safety is the main thing that employees must get to support their performance in the company. If the company can provide good work safety so that employees feel safe when carrying out their work, it will certainly improve employee performance.

In line with the opinion put forward by Wirawan (2015:543) which states that work safety is a condition where workers are safe, do not experience accidents at work so that the implementation of work takes place normally without being disturbed by work accidents. Workers can also create planned performance. In the research of Oktafianus (2019:139) it is stated that every human being or employee expects the company to be able to guarantee their safety at work, the more their safety is maintained at work, the more enthusiastic employees will be at work without having to be afraid of work accidents that they experience unexpectedly because the work safety system has been covered as well as possible by the company so that the company can improve the results of work. ership on employees. The high level of work safety at PT. PLN (Persero) Unit PDKB KSKT can be proven from the results of the index figures on the statement item "The company always provides work protection such as safety shoes , helmets, masks, and gloves" which shows a value of 228 which is categorized as high or strongly agree. From the results of these figures, it can be indicated that PT. PLN (Persero) Unit PDKB KSKT pays close attention to employee work equipment for the safety of its employees.

The Influence of Occupational Health on Employee Performance

Based on the results of the hypothesis in the study, it is known that occupational health has a positive effect on employee performance with a t count of 2.050 with a positive value with a significant result of $0.045 < 0.05$, this shows that occupational health has a positive effect on employee performance. Occupational health has been proven to have an effect on employee performance because for someone to work well, of course that person must have good health both physically and mentally. So the company must pay attention to the health of its employees so that employees can also provide maximum performance results to the company.

In line with Ramlan's opinion (2018:34), the purpose of occupational health in the Company is to maintain and improve the health of employees physically and mentally, prevent occupational diseases, and protect the health and fitness status of employees so that employees can work optimally. This explanation can also be proven from the results of the study where there were high results from occupational health at PT. PLN (Persero) Unit PDKB KSKT where the index number for the statement item "My health is checked regularly by the Company" received a value of 205 from respondents who were categorized as high or strongly agree. From these results it can be indicated that PT. PLN (Persero) Unit PDKB KSKT pays great attention to the health of its employees with conducting regular health checks on employees. Based on the results of Hidayati's research (2020:261), it was stated that the condition of employees who are optimal or in good health will affect employee performance results because if employees have good physical health, employee productivity will increase and their laziness levels will be low.

The Influence of Work Environment on Employee Performance

Based on the results of the hypothesis test that has been carried out, the calculation result of the t-value is 3.531 with a positive value with a significant result of $0.001 < 0.05$. From these results, it shows that the work environment has a positive effect on employee performance. It can also be interpreted that partially there is a significant positive effect between the work environment and employee performance at PT. PLN (Persero) Unit PDKB KSKT.

The work environment has been proven to influence employee performance because the work environment is a place where this work activity is carried out so that the comfort of the work environment greatly affects the performance results given by employees. The work environment created by PT. PLN (Persero) Unit PDKB KSKT is high as evidenced by the results of the index number on the statement item "My place of work is far from noise that can interfere with work concentration" which shows a value of 203 which means that it gets a lot of agreement from respondents. This can indicate that the work environment of PT. PLN (Persero) Unit PDKB KSKT is comfortable enough for employees so that they can concentrate well when carrying out their work. This will certainly also provide good results from employee performance. These results are in line with the opinion of Simbolon (2021:27) who said that the work environment greatly influences employee job satisfaction that arises as a result of the work situation, with a work environment that creates work passion will certainly also increase employee productivity and performance. The results of this study are also supported by the results of Kusrihandayani's research (2017:73) where her research states that the results of the work environment have a positive and significant effect on employee performance.

5. Conclusions

This study shows that Occupational Safety and Health (K3) and the work environment have a significant influence on employee performance at PT PLN PDKB KSKT Unit. Good implementation of OHS standards can create a sense of security and comfort for employees in carrying out their duties, thereby minimizing the risk of accidents and increasing productivity. On the other hand, a conducive work environment - both from physical, social and psychological aspects - also strengthens employee morale and motivation. Therefore, company management needs to pay serious attention to the implementation of the OHS system and continuous improvement of the work environment as a strategy to improve human resource performance.

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