

Effects of Occupational Safety and Health and Work Environment on Employee Performance

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Abstract

This study aims to determine the effect of Occupational Safety and Health (OSH) and the work environment on employee performance at PT Pos Indonesia (Persero) Bogor Branch, both partially and simultaneously. This research employed a quantitative approach, and the data were collected through questionnaires. The population consisted of 140 employees of PT Pos Indonesia (Persero) Bogor Branch. Using the Slovin formula, a sample of 104 respondents was selected. The data were analyzed using multiple linear regression, t-test, and F-test. The results indicate that Occupational Safety and Health (OSH) and the work environment have a positive and significant effect on employee performance, both partially and simultaneously. These findings suggest that better implementation of OSH practices and a more conducive work environment lead to improved employee performance at PT Pos Indonesia (Persero) Bogor Branch.

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1. Introduction

Human resources are a vital asset that plays a crucial role in determining a company's success. Human resources not only serve as operational task implementers but also serve as the primary driver in achieving organizational goals. A company's success generally depends on the ability of its employees to achieve maximum performance. Employee performance is a crucial factor because it directly impacts productivity, service quality, work effectiveness, and company competitiveness.

In the context of human resource management, employee performance is influenced by various internal and external factors. Two factors considered to have a significant contribution to improving employee performance are Occupational Safety and Health (OHS) and the Work Environment. This problematic phenomenon occurs in state-owned companies in the logistics, financial services, delivery operations, and postal services sectors, namely PT Pos Indonesia. Occupational Safety and Health (OHS) and an effective Work Environment are considered important factors contributing to improving employee performance so that company goals can be optimally achieved.

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Table 1 PT Pos Indonesia Workplace Accident 2025

No	Month	Number of Work Accident	Type of Accident
1	June 2025	1 Case	Traffic Accident
2	July 2025	0 Case	None
3	August 2025	0 Case	None
4	September 2025	1 Case	Traffic Accident
5	October 2025	0 Case	None
6	November 2025	0 Case	None
7	December 2025	0 Case	None
Total	2025	2 Cases	Traffic Accident

Source: Company Data 2025

Based on data from PT Pos Indonesia Bogor Branch, during the period from June to December 2025, there were 2 recorded workplace accident cases in the form of traffic accidents that resulted in serious injuries, such as fractures and wounds requiring surgical treatment. Although the number of cases was relatively low compared to the total of 140 employees, this condition indicates that the risk of workplace accidents can still occur in the company's operational activities. On the other hand, as a company engaged in delivery and logistics services, PT Pos Indonesia faces high work demands with considerable variations in work targets and performance indicators among employees, while 98.84% of employees have implemented the Objective and Key Results (OKR) system. These conditions indicate differences in workload and responsibilities, making the implementation of Occupational Safety and Health (OSH) and the creation of a conducive work environment important factors in maintaining optimal employee performance.

According to Mangkunegara in (I Dewa Ayu Intan Wulandari et al., 2022) occupational health refers to a condition in which employees are free from physical, mental, and emotional disturbances caused by the work environment, while occupational safety refers to working conditions that are safe from the risk of injury, damage, or workplace accidents. The indicators of Occupational Safety and Health (OSH), according to Mangkunegara in (I Dewa Ayu Intan Wulandari et al., 2022) include workplace conditions, air regulation, lighting arrangement, use of work equipment, and the physical and mental condition of employees.

According to Nitisemito in (Nurzalza et al., 2024) the work environment refers to everything around employees that can influence them in carrying out their tasks. A good work environment provides a sense of security and enables employees to perform their jobs optimally. The

indicators of the work environment according to Nitisemito in (Nurzalza et al., 2024) include work atmosphere, relationships with coworkers, and the availability of work facilities.

According to Robbins in (Nurzalza et al., 2024) employee performance is the result of work or tasks carried out by employees in the production process, producing products or services in accordance with their abilities and responsibilities. The indicators of employee performance according to Robbins (2006:260) in (Nurzalza et al., 2024) include work quality, work quantity, and timeliness.

Syahrum Agung et al. (2018) stated that performance is the quality and quantity of work achieved by an employee in carrying out their duties in accordance with the responsibilities assigned to them. There are various factors that influence high employee performance and contribute to performance improvement, one of which is compensation. Compensation refers to the rewards received by employees in return for their service contributions to the company.

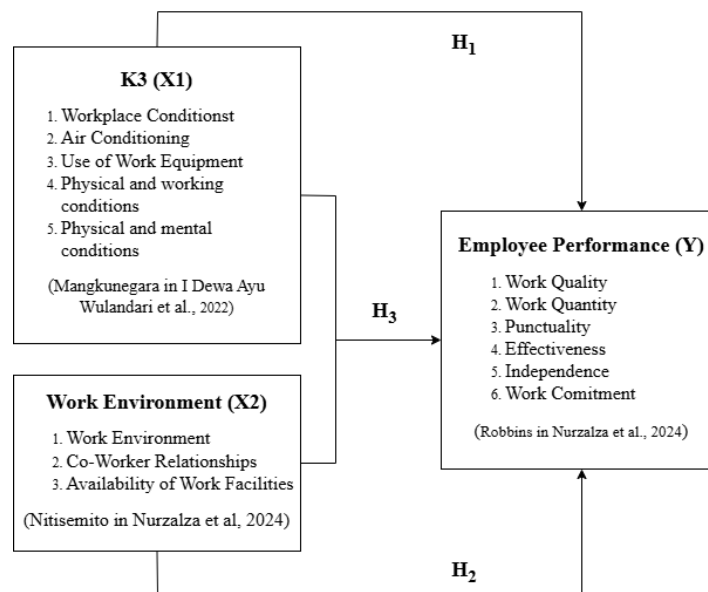


Figure 1 Framework of Thought

Information:

H1 = The Influence of Occupational Safety and Health (OSH) on Employee Performance

H2 = The Influence of Work Environment on Employee Performance

H3 = The simultaneous influence of Occupational Safety and Health (OSH) and Work Environment on Employee Performance

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Based on the background described above, the implementation of Occupational Safety and Health (OSH) and a conducive work environment are considered important factors in optimizing employee performance within a company. Therefore, this study aims to analyze “The Influence of Occupational Safety and Health (OSH) and Work Environment on Employee Performance at PT Pos Indonesia Bogor Branch.”

2. Research Method

This study used a quantitative approach, emphasizing the measurement of research variables in numerical form and analyzing them using statistical methods. The research method applied was associative, aiming to identify or examine the relationship between independent variables and dependent variables. Data were collected through questionnaires distributed to respondents via Google Forms and processed using SPSS version 32, ensuring measurable and objective data. The data sources used in this study consisted of primary and secondary data.

The population in this study consisted of all employees at PT Pos Indonesia Bogor Branch, totaling 140 employees. Considering the relatively large population size, a sample was selected using the Slovin formula with an margin of error 5%.

The sampling technique used in this study was probability sampling with a stratified random sampling method. This study employed instrument tests, namely validity and reliability tests, classical assumption tests, and hypothesis testing, including the t-test and coefficient of determination (R^2) test, with the assistance of SPSS version 32.

3. Results and Discussion

Results

1. Validity and Reliability Test

The validity test was used to determine whether a questionnaire-based indicator accurately reflects the meaning intended in the research objectives. A questionnaire is considered valid if its statements are able to measure what the questionnaire is intended to measure (Yogiswari & Rahim, 2024). The test results showed that items with an r-value > 0.191 were considered valid. The results of the main data processing are presented in the following table:

Table 2 Validity Test Results

No. Item	Variable	r table	Keterangan
1 - 15	<i>Occupational Safety and Health (OSH) (X1)</i>	0,191	Valid
1 - 9	<i>Work Environment (X2)</i>	0,191	Valid
1 - 18	<i>Employee Performance (Y)</i>	0,191	Valid

Source: Processed data (2026)

Based on the table above, the Occupational Safety and Health (OSH), Work Environment, and Employee Performance variables were proven to be valid, with an r-table correlation value (n = 104) of 0.191.

Table 3 Reliability Test Results

Variabel	Alpha	Koeffisien a	Keterangan
Occupational Safety and Health (OSH) (X1)	0,958	0,60	Reliabel
Work Environment (X2)	0,927	0,60	Reliabel
Employee Performance (Y)	0,968	0,60	Reliabel

Source: Processed data (2026)

Based on the table above, it can be seen that all research variables have an alpha coefficient value greater than 0.6, indicating that all items are reliable and can be used for further research.

2. Classic Assumption

Test Normality Test

The normality test aims to determine whether the residual values are normally distributed. A good regression model is one in which the residuals are normally distributed. This test can be conducted using the Normal P-P Plot graph and the One-Sample Kolmogorov-Smirnov test. The data are considered normally distributed if the significance probability value is > 0.05 , where as if the significance value is < 0.05 , the data are considered not normally distributed.

Table 4 Normality test results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardize d Residual
N		104
Normal Paramaters ^{a,b}	Mean	,1316081
	Sts. Deviation	4,37274982
Most Extreme Differences	Absolute	,199
	Postive	,199
	Negative	-,144
Test Statistic		,199
Asymp. Sig. (2-tailed)		,200 ^c

Source: Processed data (2026)

According to the table above, the results of the Asymp. Sig (2-tailed) test are 0.200 > 0.05 . Therefore, it can be concluded that the data is normally distributed.

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Table 5 Multikolinearitas Test Results

		<i>Coefficients^a</i>					
		Undstandardized	Coefficients	Standardized			
Model		B	Std. Error	Beta	t	Sig.	Collinearity Statistics
1	(Constant)	3,782	2,228		1,697	,093	
	Occupational Safety and Health (OSH)	,636	,156	,527	4,078	,000	,530
	Work Environment	,865	,258	,434	3,356	,001	,530

Based on the multicollinearity test results, the Occupational Safety and Health (OSH) and Work Environment variables obtained a tolerance value of 0,530 (> 0.10). Therefore, it can be concluded that there is no multicollinearity among the independent variables in the regression model, indicating that the model is free from multicollinearity problems.

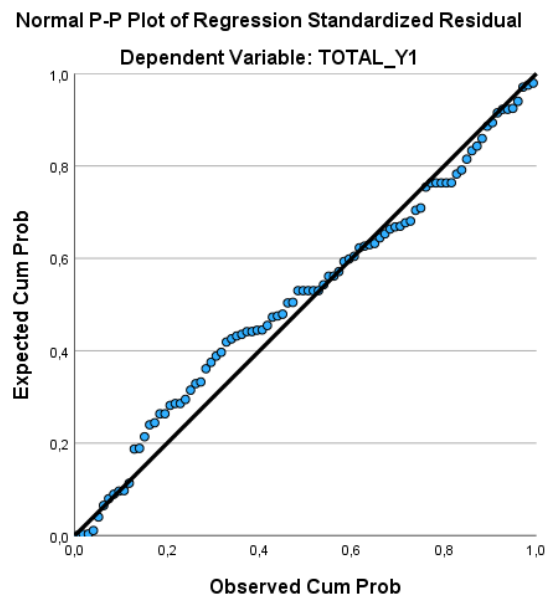


Figure 2 P-PLOTS Graph

The figure above shows that the distribution pattern is located around the diagonal line and follows its direction. This indicates that the data in the graph are normally distributed.

3. Multiple Regression Analysis

Multiple regression analysis was conducted to determine the influence of Occupational Safety and Health (OSH) (X1) and Work Environment (X2) on Employee Performance (Y).

Table 6 Results of Multiple Linear Regression Analysis

Model	<i>Coefficients</i>		<i>Standardized Coefficients Beta</i>	<i>t</i>	<i>Sig.</i>
	<i>Undstandardized B</i>	<i>Coefficients Std. Error</i>			
1. (Constant)	3,782	2,228		1,697	,093
OSH	,636	,156	,527	4,078	,000
Work Environment	,865	,258	,434	3,356	<,001

Source: Processed data (2026)

Based on the regression analysis presented in Table 3, the following equation was obtained: $Y = 3.782 + 0.636 (X1) + 0.865 (X2)$. Based on the regression coefficient values, Occupational Safety and Health (OSH) (X1) has a positive effect on Employee Performance (Y), with a significance value of $0.000 < 0.05$, indicating that X1 has a positive and significant effect on Y. Furthermore, based on the coefficient value, Work Environment (X2) also has a positive effect on Employee Performance, with a significance value of $0.001 < 0.05$, indicating that (X2) has a positive and significant effect on (Y)

3. Hypothesis Testing with the T-Test (Partial)

The t-test is used to determine the significant influence between the independent and dependent variables.

Table 7 T-Test Results

No.	Variable	t hitung	Signifikan	Ket.
1.	OSH (X1)	30,390	0,000	Signifikan
2.	Work Environment (X2)	29,610	0,000	Signifikan

Source: Processed data (2026)

Based on Table 4 above, it can be explained that:

a. Testing the first hypothesis (H1)

the Occupational Health and Safety (K3) variable has a t-value of 30.390 and a significance level of 0.000, where sig. $0.000 < 0.05$. This means K3 has a positive and significant effect on employee performance. H1 is accepted.

b. Testing the hypothesis (H2)

the Work Environment variable has a t-value of 29.610 and a significance level of 0.000, where sig. $0.000 < 0.05$. This means the work environment has a positive and significant effect on employee performance. H2 is accepted.

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4. Testig the Coefficient of Determination (R^2)

The determination coefficient test aims to measure the magnitude of the effect of Occupational Health and Safety (K3) and Work Environment on Employee Performance. The test results can be seen as follows:

Table 8 Determination Values (R^2)

<i>Model Summary</i>				
Model	R	R Square	Adjusted R Square	Std. Error Of the Estimate
1	,954 a	,911	,909	4,40523

Source: Processed data (2026)

The table above shows that the determination coefficient (R Square) is 0.911 or 91.1%. This indicates that the K3 variable (X1) and Work Environment (X2) simultaneously explain 91.1 % of the variation in Employee Performance (Y), while the remaining 8.9% is influenced by other factors.

5. Simultaneos Testing (F-Test)

The purpose of this hypothesis testing is to understand how the independent and dependent variables influence each other, as shown in the following table:

Table 9 Simultaneos Test Results (F-Test)

<i>ANOVA</i>					
<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1 Regression	19943,747	2	9971,873	513,853	<,000 ^b
Residual	1960,013	101	19,406		
Total	21903,760	103			
<i>a. Dependen Variabel Employee Performance</i>					
<i>b. Predictor: (Constant) OSH, Work Environment</i>					

Source: Processed data (2026)

Based on the table above, the simultaneous test calculation results show that the calculated F value is 513.853, which is greater than the F table value of 3.04, and the significance value is 0.000, which is less than 0.05. It can be concluded that H_a is accepted and H_o is rejected, meaning that the Commitment variable (X1) and Cooperation variable (X2) simultaneously have a significant effect on Employee Performance (Y) at PT Pos Indonesia Bogor Branch.

Discussion

1. The Effect of Occupational Health and Safety (K3) Implementation on Employee Performance at PT Pos Indonesia Bogor Branch

Based on the partial hypothesis test results for the K3 variable (X1), the t calculated value is greater than the t table value, specifically $4.078 > 1.983$, with a significance of $0.000 < 0.05$. Therefore, H_{a1} is accepted and H_{o1} is rejected, indicating that K3 has a positive and significant effect on Employee Performance at PT Pos Indonesia KC Bogor. This shows that the better the K3 implementation, the higher the Employee Performance.

Empirically, K3 plays a role in creating a sense of safety and protection for employees during work, especially in operational activities such as goods sorting, package distribution, and customer service, which have relatively high work risks. From an HRM perspective, K3 is part of the maintenance function aimed at maintaining employees' physical and mental conditions to remain optimal. According to Mangkunegara, K3 aims to protect employees from work accident risks and health disturbances caused by the work environment.

This research result aligns with research by (Zultan Octavian Akbar, 2024) and (Aftari et al., 2025), which states that K3 has a positive and significant effect on Employee Performance. Therefore, K3 is an important factor in improving employee performance.

2. The Effect of Work Environment on Employee Performance at PT Pos Indonesia Bogor Branch

The partial hypothesis test results for the Work Environment variable (X2) show that the t calculated value is greater than the t table value, specifically $3.356 > 1.983$, with a significance of $0.001 < 0.05$. Therefore, H_{o2} is rejected and H_{a2} is accepted, indicating that the Work Environment has a positive and significant effect on Employee Performance at PT Pos Indonesia KC Bogor. This means that the better the Work Environment, the higher the Employee Performance.

Practically, the Work Environment covers physical and non-physical aspects, such as lighting, cleanliness, work facilities, relationships among co-workers, and communication with supervisors. At PT Pos Indonesia KC Bogor, a comfortable work environment is an important factor for maintaining employee work concentration and effectiveness. According to Nitisemito, a good Work Environment can create a sense of safety and comfort, enabling employees to work optimally.

This research result aligns with research by (Siti Soleha et al., 2025) and (Risa Hasnawati et al., 2024) which states that the Work Environment has a significant effect on Employee Performance. Therefore, the Work Environment is one of the important factors in improving employee performance.

3. The Effect of Occupational Health and Safety (K3) Implementation and Work Environment on Employee Performance at PT Pos Indonesia Bogor Branch

Based on the simultaneous hypothesis test results, the F calculated value is 513.853, which is greater than the F table value of 3.04, with a significance of $0.000 < 0.05$. Therefore, K3 (X1) and Work Environment (X2) jointly have a positive and significant effect on Employee Performance at PT Pos Indonesia Bogor.

This result shows that the improvement in employee performance is influenced by the combination of good K3 implementation and a conducive Work Environment. From an HRM perspective, K3 plays a role in maintaining employee safety and health, while the Work Environment supports work comfort and effectiveness.

The R^2 value of 91.1% indicates that K3 and Work Environment have a very large contribution to Employee Performance. This research result aligns with research by (Aftari et al., 2025), (Siti Soleha et al., 2025), and (Zultan Octavian Akbar, 2024), which states that K3 and Work Environment simultaneously have a significant effect on Employee Performance.

4. Differences and similarities in previous research

In the study (Nurkhairi, 2025) titled "The Effect of Work Environment and K3 on Employee Performance at PT Gomda Sindaru Indonesia Jakarta Barat," it has similarities with this study in the use of the work environment variable, Occupational Safety and Health (K3), and employee performance variables. Additionally, both studies use the same quantitative approach with multiple linear regression analysis. The difference in the research lies in the object and research location. The previous study was conducted at PT Gomda Sindaru Indonesia Jakarta Barat with 60 respondents, while this study was conducted at PT Pos Indonesia Bogor Branch with a sample of 104 respondents. And the results show that both variables simultaneously have a significant effect on employee performance.

4. Conclusions and Suggestions

Conclusion

Based on the research results and discussion, it can be concluded that Occupational Safety and Health (K3) and Work Environment have a positive effect on Employee Performance at PT Pos Indonesia Bogor Branch. This research result proves that the hypotheses proposed in the study have been accepted.

1. The Occupational Health and Safety (K3) variable (X1) has a positive and significant effect on Employee Performance (Y) at PT Pos Indonesia Bogor Branch.

2. The Work Environment variable (X2) has a positive and significant effect on Employee Performance (Y) at PT Pos Indonesia Bogor Branch.
3. The Occupational Health and Safety (K3) variable (X1) and Work Environment (X2) simultaneously have a positive and significant effect on Employee Performance (Y) at PT Pos Indonesia Bogor Branch

Suggestion

1. PT Pos Indonesia KC Bogor is expected to continuously improve K3 implementation to minimize work accident risks and create a sense of safety for employees.
2. PT Pos Indonesia KC Bogor is expected to create a more conducive and comfortable work environment to increase employee productivity.
3. Company management is expected to conduct regular employee performance evaluations to improve work effectiveness.
4. Future researchers are expected to add other variables and expand the research object to make research results broader and more in-depth.

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