

The Influence of Occupational Health and Safety (OHS), Work Environment, and Employee Engagement on Employee Performance at PT. Waskita Karya (Persero) Tbk

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Abstract: *This study aims to determine the influence of Occupational Health and Safety (OHS), Work Environment, and Employee Engagement on employee performance at PT. Waskita Karya (Persero) Tbk. Data collection was conducted through the distribution of questionnaires. The study employed a probability sampling technique specifically, proportionate stratified random sampling resulting in a sample of 63 employees. Data analysis utilized multiple linear regression, processed using the Statistical Product and Service Solutions (SPSS) software, version 26. The results indicate that OHS, Work Environment, and Employee Engagement simultaneously influence employee performance at PT. Waskita Karya (Persero) Tbk, with a significance level of $0.000 < \alpha (0.05)$, meaning the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. The multiple linear regression equation is $Y = 22.970 + 0.152X_1 + 0.275X_2 + 0.200X_3$. OHS has a partial influence on employee performance (significance $0.041 < \alpha (0.05)$); the work environment has a partial influence on employee performance (significance $0.000 < \alpha (0.05)$); and employee engagement has a partial influence on employee performance (significance $0.014 < \alpha (0.05)$).*

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Introduction

Human resources (HR) are a crucial factor in determining the success of an organization, including PT Waskita Karya (Persero) Tbk, a state-owned enterprise engaged in the construction and infrastructure sector. In carrying out various strategic projects, the company relies heavily on the quality of employee performance, supported by the implementation of occupational safety and health (OHS), a conducive work environment, and

employee engagement. Employee performance is a crucial aspect of a company's operational success because it reflects an individual's contribution to achieving organizational goals (Fahriana & Sopiah, 2022; Putri Pratiwi, 2025). Therefore, integrated management of OHS, the work environment, and employee engagement is necessary for the company to create productive, competent, and competitive human resources.

Occupational safety and health are fundamental aspects of construction companies because the nature of the work poses various potential risks to worker safety and health. Occupational safety and health (K3) aims to protect workers from risks that can disrupt their physical, mental, and social well-being due to work (Ramdhona, 2020). Proper implementation of K3 can reduce workplace accident rates and increase a sense of security, which ultimately has a positive impact on employee productivity (Dwiyanti & Dessyarti, 2023). Furthermore, implementing K3 can also improve work efficiency and build a safe and healthy work culture (Tampubolon, 2024). Therefore, implementing safety procedures, complying with SOPs, and using personal protective equipment are essential in supporting smooth work processes and achieving employee performance.

In addition to occupational health and safety (K3), the work environment also plays a crucial role in shaping employee comfort and productivity. A conducive work environment can improve performance and provide employees with a sense of comfort in carrying out their work (Carlita, 2021, in Simbolon, 2021). Conversely, an unsupportive work environment can decrease motivation and job satisfaction (Setiawan & Nuridin, 2021). Marisya (2022) explains that a positive work environment can create a positive atmosphere that supports increased productivity, while a poor work environment can reduce morale and cause stress. This condition becomes even more critical in construction project environments that experience dynamic activity, high levels of noise and dust, and significant work pressure.

Another factor is employee engagement, which describes the physical, emotional, and cognitive connectedness of employees to the organization. Employee engagement indicates the extent to which individuals feel connected, committed, and driven to make positive contributions to achieving organizational goals (Fajriyah, 2024). Employees with high engagement tend to be more productive, innovative, and loyal to the company, while employees who are disengaged or apathetic can hinder organizational progress (Umi Fajriyah, 2025). Therefore, employee engagement is an important aspect that companies need to pay attention to, especially in work conditions that involve high pressure and workloads, because the level of engagement can affect employee morale, responsibility, commitment, and performance achievement.

PT Waskita Karya (Persero) Tbk, located in the Grand City Complex, plays a strategic role in the implementation and management of construction projects. The company's activities include project coordination, human resource management, quality control, and occupational safety supervision. The company's development at the site is characterized by increasing work complexity, the use of construction technology, and the implementation of increasingly modern project management systems. However, this development is also accompanied by



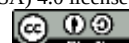
various challenges, such as the pressure of project targets and demands for effective and timely completion of work. Initial survey results indicate that employee performance is still suboptimal, as evidenced by the fact that some employees still do not consistently use SOPs, there is a gap between company targets and work results, some work has not been completed on time, and the quality and consistency of task completion that does not fully meet company standards.

This phenomenon is increasingly evident in the suboptimal implementation of OHS, work environment conditions, and employee engagement. Employees are still found to be lacking in discipline in implementing safety procedures, including neglecting the use of PPE or not following safe work procedures in order to expedite work completion. In terms of the work environment, there are still suboptimal lighting and air circulation conditions, while the characteristics of construction projects expose employees to noise, dust, safety risks, work pressure, and fatigue. Furthermore, observations indicate that high pressure and workload are associated with decreased employee enthusiasm, active participation, sense of responsibility, loyalty, and commitment to achieving company targets. These conditions indicate a gap between the ideal conditions expected based on previous research and empirical conditions in the field. Theoretically, OHS, a conducive work environment, and employee engagement should be able to support improved performance, but the research object still found various problems in these three aspects. Therefore, research on the influence of OHS, the work environment, and employee engagement on employee performance at PT Waskita Karya (Persero) Tbk is important to obtain empirical evidence and provide a basis for the company to improve occupational safety, create a more conducive work environment, increase employee engagement, and optimize employee performance.

Research Methods

This study uses a quantitative approach with the aim of determining the effect of Occupational Safety and Health (K3), work environment, and employee involvement on employee performance at PT Waskita Karya (Persero) Tbk. The study was conducted at PT Waskita Karya (Persero) Tbk located on Jalan Amanzi Water Park, Citra Grand City Complex, Palembang City, South Sumatra, with a research period of four months, namely February to May 2026. The study population consisted of 172 employees working on the Section II Toll Road Project. Based on calculations using the Slovin formula with a ten percent error rate, a sample of 63 respondents was obtained. Sampling used proportionate stratified random sampling, namely random selection of respondents by considering strata or groups in the population proportionally.

Data collection was conducted using primary and secondary data. Primary data were obtained directly from respondents through interviews, observations, and questionnaires, while secondary data were obtained through documents, company archives, books, scientific journals, and other relevant sources. The research instrument was tested through validity and reliability tests to ensure the instrument's suitability in measuring the research variables. Data analysis was conducted using inferential statistical analysis with multiple linear regression to determine the effect of K3, work environment, and employee engagement on employee performance. Before the regression analysis was conducted, the data were first tested using



classical assumption tests including normality, heteroscedasticity, and multicollinearity tests. Next, correlation coefficient and determination coefficient analyses were conducted, as well as hypothesis testing through simultaneous tests (F tests) and partial tests (t tests).

Results and Discussion

Classical Assumption Test

1. Normality Test

Table 1. Normality Test

One-Sample Kolmogorov-Smirnov Test			Unstandardized Residual
N			63
Normal Parameters ^{a,b}	Mean		.0000000
	Standard Deviation		4.27782261
Most Extreme Differences	Absolute		.070
	Positive		.070
	Negative		-.055
Test Statistics			.070
Asymp. Sig. (2-tailed) ^c			.200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.		.610
	99% Confidence Interval	Lower Bound	.598
		Upper Bound	.623

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

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

e. Lilliefors' method is based on 10000 Monte Carlo samples with starting seed 957002199.

Source: Processed data from SPSS 25 (2026)

Based on Table 1, the results of the Kolmogorov-Smirnov normality test obtained an Asymp. Sig. (2-tailed) value of 0.200 > 0.05, so it can be concluded that the residual data is normally distributed. Thus, the regression model meets the assumption of normality.

2. Multicollinearity Test Results

Table 2. Multicollinearity Test Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	22,970	3,466		6,628	.000		
	Effect of K3 (X1)	.152	.073	.228	2,089	.041	.291	3,435
	Work Environment (X2)	.275	.067	.436	4,089	.000	.306	3,265
	Employee Engagement (X3)	.200	.079	.291	2,532	.014	.264	3,795

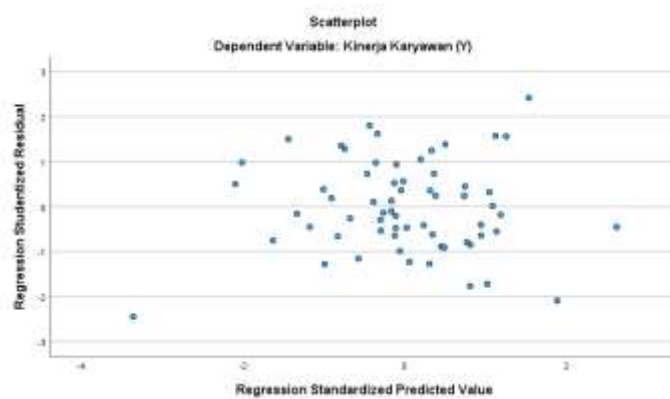
a. Dependent Variable: Employee Performance (Y)

Source: SPSS data processing version 26 (2026)

Based on table 2 above, the results of the Multicollinearity test show that each variable has a tolerance value of more than 0.010 and a VIF value of less than 10. Thus, it can be concluded that there is no Multicollinearity problem.

3. Heteroscedasticity Test Results

Table 3. Results of Heteroscedasticity Test



Source: SPSS data processing version 26 (2026)

Based on the results of the Glejser heteroscedasticity test, the significance value of the K3 variable was 0.284, the Work Environment was 0.940, and the Employee Engagement was 0.336. All significance values were greater than 0.05, thus it can be concluded that there are no symptoms of heteroscedasticity in the regression model. Thus, the regression model meets the heteroscedasticity assumption.

Multiple Linear Regression Test Results

Table 4. Results of Multiple Linear Analysis

		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	22,970	3,466		6,628	.000		
	Effect of K3 (X1)	.152	.073	.228	2,089	.041	.291	3,435
	Work Environment (X2)	.275	.067	.436	4,089	.000	.306	3,265
	Employee Engagement (X3)	.200	.079	.291	2,532	.014	.264	3,795

a. Dependent Variable: Employee Performance (Y)

Source: SPSS data processing version 26 (2026)

Based on the results of the multiple linear regression, the following regression equation can be formed; $Y = 22.970 + 0.152 X_1 + 0.275X_2 + 0.200X_3$. From the multiple linear regression equation above, it is explained as follows:

1. Constant Value (a) = 22.970

The constant value of 22.970 indicates that if the variables K3 (X1), Work Environment (X2), and Employee Involvement (X3) have a value of 0, then Employee Performance (Y) is 22.970.

2. Regression Coefficient $b_1 = 0.152$

The regression coefficient of the K3 variable (X1) is 0.152. This means that if K3 increases by one unit, then Employee Performance will increase by 0.152 units, assuming other variables are constant.

3. Regression Coefficient $b_2 = 0.275$

The regression coefficient of the Work Environment variable (X2) is 0.275. This means that if the Work Environment increases by one unit, Employee Performance will increase by 0.275 units, assuming other variables remain constant.

4. Regression Coefficient $b_3 = 0.200$

The regression coefficient of the Employee Engagement variable (X3) is 0.200. This means that if Employee Engagement increases by one unit, Employee Performance will increase by 0.200 units, assuming other variables are constant.

Results of Correlation Coefficient Analysis (R)

Table 5. Results of Correlation Coefficient Analysis (r)

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.891a	.795	.784	4.38523

a. Predictors: (Constant), Employee Engagement (X3), Work Environment (X2), K3 Influence (X1)

Source: SPSS Data Processing version 26 (2026)

Based on the Model Summary results, a correlation coefficient (R) value of 0.819 was obtained. Because the R value is in the range of 0.80-1.00, it can be concluded that the relationship between the variables of K3, Work Environment and Employee Engagement together with employee performance at PT. Waskita Karya (PERSERO) Tbk is in the very strong category.

Results of the Analysis of the Coefficient of Determination (R²)

Table 6. Results of the Analysis of the Coefficient of Determination (R²)

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.891a	.795	.784	4.38523

a. Predictors: (Constant), Employee Engagement (X3), Work Environment (X2), K3 Influence (X1)

Source: SPSS Data Processing version 26 (2026)

Based on Table 6, the Adjusted R Square value is 0.795 or 79.5%. This indicates that the variables K3 (X1), Work Environment (X2), and Employee Engagement (X3) together are able to explain 79.5% of the variation in Employee Performance (Y), while the remaining 20.5% is explained by other variables not examined in this study.

Hypothesis Test Results

1. Simultaneous Test Results (F Test)

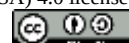
Table 7. Simultaneous Test Results (F Test)

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4391.827	3	1463,942	76,127	.000b
	Residual	1134,586	59	19,230		
	Total	5526.413	62			

a. Dependent Variable: Employee Performance (Y)

b. Predictors: (Constant), Employee Engagement (X3), Work Environment (X2), K3 Influence (X1)

Based on the results of the simultaneous test (F test), the calculated F value was 76.127 with a significance value of 0.000. Because the significance value is less than 0.05



($0.000 < 0.05$), H_0 is rejected and H_a is accepted. Thus, the variables of K3, Work Environment, and Employee Involvement simultaneously have a significant effect on Employee Performance.

2. Partial Test Results (t-Test)

Table 8. Partial Test Results (t-Test)

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	22,970	3,466		6,628	.000
	Effect of K3 (X1)	.152	.073	.228	2,089	.041
	Work Environment (X2)	.275	.067	.436	4,089	.000
	Employee Engagement (X3)	.200	.079	.291	2,532	.014

a. Dependent Variable: Employee Performance (Y)

Source: SPSS data processing version 26 (2026)

Based on the calculation results from table 4.18 above, the following results were obtained:

a. The Influence of K3 (X1) on Employee Performance (Y)

Based on the results of the t-test, the calculated t-value was 2.089 with a significance value of 0.041. Since the significance value is less than 0.05 ($0.041 < 0.05$), H_0 is rejected and H_a is accepted. Thus, the K3 variable (X1) has a significant effect on Employee Performance (Y).

b. The Influence of Work Environment (X2) on Employee Performance (Y)

Based on the results of the t-test, the calculated t-value was 4.089 with a significance value of 0.000. Because the significance value is less than 0.05 ($0.000 < 0.05$), H_0 is rejected and H_a is accepted. Thus, the Work Environment variable (X2) has a significant effect on Employee Performance (Y).

c. The Influence of Employee Engagement (X3) on Employee Performance (Y)

Based on the results of the t-test, the calculated t-value was 2.532 with a significance value of 0.014. Because the significance value is less than 0.05 ($0.014 < 0.05$), H_0 is rejected and H_a is accepted. Thus, the Employee Engagement variable (X3) has a significant effect on Employee Performance (Y).

Discussion

The Influence of Competence, Communication and Work Environment on Employee Performance

Based on the results of the simultaneous test (F Test), it can be seen that the variables of K3, Work Environment, and Employee Involvement together have a significant effect on Employee Performance at PT Waskita Karya (Persero) Tbk. This is evidenced by a significance value of 0.000 which is smaller than 0.05 ($0.000 < 0.05$), so that H_0 is rejected and H_a is accepted.

Based on the results of the coefficient of determination, the Adjusted R Square value was obtained at 0.795 or 79.5%. This indicates that Employee Performance at PT Waskita Karya (Persero) Tbk can be explained by the variables of OHS, Work Environment, and Employee Involvement by 79.5%, while the remaining 20.5% is influenced by other factors not examined in this study. The results of this study indicate that the better the implementation of OHS, the more conducive the work environment, and the higher the employee involvement, the more the employee performance at PT Waskita Karya (Persero) Tbk will increase.

The Influence of K3 (X1) on Employee Performance (Y)

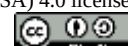
The results of the hypothesis test indicate that the K3 variable has a significant effect on employee performance. This is evidenced by a significance value of 0.041, which is smaller than 0.05 ($0.041 < 0.05$), so H_0 is rejected and H_a is accepted. Thus, K3 has a partial effect on employee performance at PT Waskita Karya (Persero) Tbk.

Theoretically, Occupational Safety and Health (K3) is a company's effort to create safe and healthy working conditions to reduce the risk of workplace accidents and increase employee comfort. Therefore, the better the implementation of K3, the higher employee performance will be. The results of this study align with research conducted by Putri & Fu'ad (2023), which stated that Occupational Safety and Health (K3) has a positive and significant impact on employee performance. The better the implementation of K3 programs by a company, the higher the level of employee safety, comfort, and work productivity, which in turn impacts improved performance.

The Influence of Work Environment (X2) on Employee Performance (Y)

The results of the hypothesis test indicate that the Work Environment variable has a significant effect on employee performance. This is evidenced by a significance value of 0.000 which is smaller than 0.05 ($0.000 < 0.05$), so H_0 is rejected and H_a is accepted. Thus, the Work Environment has a partial effect on employee performance at PT Waskita Karya (Persero) Tbk.

A comfortable, safe work environment, supported by good working relationships, will encourage employees to work more effectively and productively. Based on a beta value of 0.436, the work environment is the most dominant variable influencing employee performance. This study's results align with research conducted by Saefullah & Basrowi (2022), which showed that the work environment has a positive and significant impact on employee performance. A comfortable, safe, and supportive work environment can increase



employee motivation and enthusiasm in achieving company targets.

The Influence of Employee Engagement (X3) on Employee Performance (Y)

The results of the hypothesis test indicate that the Employee Engagement variable has a significant effect on employee performance. This is evidenced by a significance value of 0.014 which is smaller than 0.05 ($0.014 < 0.05$), so H_0 is rejected and H_a is accepted. Thus, Employee Engagement has a partial effect on employee performance at PT Waskita Karya (Persero) Tbk.

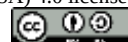
High employee engagement demonstrates participation, commitment, and a sense of belonging to the company. The higher employee engagement in their work and organization, the higher their performance. This study aligns with research conducted by Sihombing et al. (2026), which concluded that employee engagement has a positive and significant impact on employee performance. Employees with high engagement demonstrate greater commitment, responsibility, and participation in their work, thus optimally improving performance.

Conclusion and Recommendation

Berdasarkan hasil penelitian, OHS, work environment, dan employee engagement masing-masing berpengaruh signifikan terhadap employee performance, serta ketiganya secara simultan berpengaruh terhadap employee performance pada PT Waskita Karya (Persero) Tbk. Work environment memiliki pengaruh paling dominan dibandingkan variabel lainnya. Secara keseluruhan, model penelitian mampu menjelaskan 78,4% variasi employee performance berdasarkan nilai Adjusted R Square. Perusahaan disarankan untuk terus meningkatkan penerapan OHS, kualitas lingkungan kerja, dan employee engagement, sedangkan penelitian selanjutnya dapat mempertimbangkan variabel lain yang memengaruhi employee performance.

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