



## The Relationship between the Implementation of the Occupational Safety and Health Management System (SMK3) and Employee Performance

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### ABSTRACT

The implementation of the Occupational Safety and Health Management System (SMK3) is an important effort in creating a safe and healthy work environment and increasing employee productivity. The high number of work accidents both globally and nationally shows that the implementation of SMK3 is not optimal. This condition can have an impact on a decrease in employee performance. Therefore, this study aims to determine the relationship between the implementation of SMK3 and employee performance at PT PLN (Persero) ULP Tomohon. This study uses a quantitative design with a cross sectional approach. The population in this study is all employees of PT PLN (Persero) ULP Tomohon as many as 62 people with a total sampling technique. Data were collected using a Likert scale questionnaire and analyzed using the Spearman Rank correlation test. The results of the study showed that most of the respondents had the implementation of SMK3 and employee performance in the high category. The results of the correlation test showed that there was a significant and strong relationship between the implementation of SMK3 and employee performance. This shows that the better the implementation of SMK3, the higher the performance of employees. There is a significant relationship between the implementation of SMK3 and employee performance at PT PLN (Persero) ULP Tomohon.

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### INTRODUCTION

Human resources are a major asset in the organization because they play a role in achieving the company's goals. Workforce management not only focuses on improving competencies, but also on protecting occupational safety and health (K3). The implementation of K3 aims to create a safe, healthy, and productive work environment. Globally, the K3 standard is regulated in ISO 45001:2018 which emphasizes risk control and continuous improvement. However, the number of work accidents is still high both globally and nationally. In Indonesia, cases of work accidents continue to increase every year. This shows that the implementation of SMK3 has not been optimal. In fact, the good implementation of SMK3 can increase productivity and performance karyawan. PT PLN (Persero) ULP Tomohon is a company that has high work risks, especially in electrical technical work. Based on initial observations, there are still work accidents even though the company has implemented K3. Therefore, this study aims to determine the relationship between the implementation of SMK3 and employee performance at PT PLN (Persero) ULP Tomohon.

## MATERIALS AND METHODS

This study is a quantitative research with a cross sectional approach, which aims to determine the relationship between the implementation of the Occupational Safety and Health Management System (SMK3) and employee performance. The research will be carried out at PT PLN (Persero) ULP Tomohon in 2026. The population in this study is all employees totaling 62 people. The sampling technique uses total sampling, so that the entire population is used as a research sample. The variables in this study consist of independent variables, namely the implementation of SMK3, and dependent variables, namely employee performance. Data were collected using a questionnaire with a Likert scale that had been compiled based on the indicators of each variable. The questionnaire was distributed directly to the respondents to obtain primary data. Data processing is carried out through several stages, namely editing, coding, data entry, and cleaning.

Data analysis was carried out univariate to describe the characteristics of respondents and the distribution of research variables, as well as bivariate analysis to determine the relationship between variables using the Spearman Rank test. The test criteria used is that if the p-value < 0.05, it is stated that there is a significant relationship between the variables, while if the p-value > 0.05, it is stated that there is no significant relationship. Data analysis is carried out with the help of statistical programs.

## DISCUSSION AND RESULTS

Table 1. Characteristics of Respondents

Gender	F	%
Male	56	90,3
Women	6	9,7
Age	F	%
20-25	11	17,7
26-33	19	30,6
34-45	26	41,9
>46	6	9,7
Education	F	%
High School	34	54,8
Diploma	7	11,3
S1	20	32,3
Stuttgart	1	1,6
Long Time Working	F	%
1 Year	2	3,2
1-5 Years	25	40,3
5-10 Years	22	35,5
>10 Years	13	100

Source: Primary Data 2026

Based on the results of the study on 62 respondents, the majority were male as many as 56 people (90.3%) and 6 women (9.7%), showing the dominance of the male workforce. Based on age, most were at the age of 34–45 years (41.9%), followed by 26–33 years (30.6%), 20–25 years (17.7%), and >46 years (9.7%), which showed that the majority were in productive age.

Judging from education, the majority of respondents had a high school education (54.8%), followed by S1 (32.3%), Diploma (11.3%), and others (1.6%). Based on length of employment, most of them have a working period of 1–5 years (40.3%), followed by 5–10 years (35.5%), >10 years (21.0%), and 1 year (3.2%). This shows that most employees have enough work experience.

Table 2. Distribution of Respondents Based on the Implementation of SMK3

Implementation of SMK3	F	%
Medium	2	3,2
Height	60	96,8
<b>Total</b>	<b>62</b>	<b>100</b>

Source: Primary Data 2026

Based on the distribution of the implementation of the Occupational Safety and Health Management System (SMK3), it is known that most of the respondents are in the high category, namely 60 people (96.8%). Meanwhile, only 2 respondents were in the medium category (3.2%), and there were no respondents in the low category. This shows that the implementation of SMK3 at PT PLN (Persero) ULP Tomohon has been running well and optimally. The high percentage in the high category indicates that companies have consistently implemented occupational safety and health standards, both through the use of personal protective equipment (PPE), the implementation of safe work procedures, and supervision of occupational risks. This condition has the potential to have a positive impact on employee performance, because a safe and healthy work environment can increase comfort, concentration, and productivity at work.

Table 3. Distribution Based on Employee Performance

<b>Employee Performance</b>	<b>F</b>	<b>%</b>
Medium	3	4,8
Height	59	95,2
<b>Total</b>	<b>62</b>	<b>100</b>

Source: Primary Data 2026

Based on the distribution of employee performance, it is known that most of the respondents are in the high category, namely 59 people (95.2%). Meanwhile, respondents in the medium category were 3 people (4.8%), and there were no respondents in the low category. This shows that in general, the performance of employees at PT PLN (Persero) ULP Tomohon is in good condition. A high percentage in the high category indicates that employees are able to carry out their duties and responsibilities effectively, both in terms of quality and quantity of work. This high performance can be influenced by various factors, such as work experience, skill level, and supportive work environment conditions. In addition, the implementation of a good occupational safety and health management system (SMK3) can also create a sense of security and comfort for employees, thus having an impact on increasing motivation and work productivity.

Table 4. Implementation Relationship (SMK3) with Employee Performance

<b>Variable</b>	<b>Employee Performance</b>			
	<b>Koef. Correlation (r)</b>	<b>Significance (p)</b>	<b>Quantity (n)</b>	<b>Remarks</b>
<b>Implementation of SMK3</b>	0,724	0,000	62	There is a significant relationship (positive, strong)

Source: Primary Data 2026

Based on the results of bivariate analysis using the Spearman Rank test, a correlation coefficient value ( $\rho$ ) of 0.724 with a significance value (p-value) of 0.000 was obtained. A p-value of less than 0.05 indicates that there is a significant relationship between the implementation of the Occupational Safety and Health Management System (SMK3) and employee performance. The value of the correlation coefficient of 0.724 indicates that the relationship between the two variables is strong and positive. This means that the better the implementation of SMK3 in the company, the higher the employee performance. This positive relationship indicates that the optimal implementation of SMK3, such as the use of personal protective equipment (PPE), the implementation of safe work procedures, and supervision of work risks, is able to create a safe and comfortable work environment. These conditions contribute to increasing employee concentration, motivation, and work productivity. Thus, the implementation of SMK3 not only functions as an effort to prevent work accidents, but also has a strategic role in improving employee performance in the Company

## CONCLUSION

There is a significant relationship between the implementation of SMK3 and employee performance at PT PLN (Persero) ULP Tomohon. Based on the results of the Spearman Rank statistical test, a p-value of 0.000 ( $p < 0.05$ ) was obtained, which shows a significant relationship between the implementation of SMK3 and employee performance. The correlation coefficient value of 0.724 indicates that the relationship is in the strong and positive category, which means that the better the implementation of SMK3, the employee performance tends to increase.

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